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In order to save space, all the pieces are shown in one picture. The reader can readily tell which are referred to. The same plates, teapot, sugar-bowl, etc., go with all the sets, but in the larger offers more and more pieces are added to the ten set. All are of the same beautiful style of decoration.

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This is the same as the 100-piece set described above, with the addition of the great turkey platter and one dozen after-dinner coffee cups and saucers to match.

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The 84-piece dinner and tea set combined will be sent to any address in the United States as a Premium for a Club of only 10 subscribers for one year and \$3 additional, or for a Club of only 20 subscribers for one year and \$1.50 in money additional; or we will sell it outright for \$6.10. We prefer the Club.

The 100-piece extra dinner and tea set combined will be sent to any address in the United States as a Premium for a Club of 10 yearly subscribers at \$1 each and \$5.75 added; or for a Club of 20 yearly subscribers and \$3 added; or free as a Premium for a Club of 33 yearly subscribers. For sale at \$10.35.

The grand extra combined dinner and tea set of 125 pieces we will send to any address in the United States as a Premium for a Club of 10 yearly subscribers and \$8.75 added; for a Club of 20 subscribers and \$4.40 added. Sent as a free gift to a Club-raiser who sends in a Club of 45 yearly subscribers. For sale at \$13.50.

The China will be carefully boxed and shipped by express or freight, the receiver to pay charges of transportation. Post freight takes a little more time than express, but it is preferable unless the goods are needed in special haste; because the charges are very much lower by freight, and, in fact, except to very distant points, amounts to but a trifle.

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Thrown In.

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CLUB-RAISERS.

This is the name we give to the famous Elgin Watch that is best adapted to the use of farmers in every part of the United States. This watch is complete in every way, and represents the triumph of American skill and genius. The case is made of solid nickel silver, a composition which is handsome and more durable than coin silver. The face is protected by a heavy crystal or beveled plate glass strong enough to bear a great weight. It winds and sets at the stem and need never be opened. The works are beautifully finished, and contain seven handsome jewels, compensating expansion balance, patent safety pinion, improved plain regulator, and other great improvements suggested by years of study and experiment. The parts are interchangeable, and are made of the most highly-tempered metals. Some of the parts are produced with such difficulty that they are worth ten times their weight in gold.



No farmer or farmer's son should be without this watch, which keeps the time so accurately, that it needs to be compared with a regular only once in many months. We have contracted for a large number of these watches, and to make them move quickly we have determined to furnish a chain with each watch. These chains will not be sold separately. They are made of nickel-plated steel and are ornamented with a charm. Thousands of farmers will, of course, wish one of these watches, and our immense supply will probably be exhausted within a few months, so club-raisers and purchasers should allow no time to pass before they try to get one for a club or for cash.

For the present we offer this watch and chain for a club of 10 subscribers and \$2.50 added money—\$12.50 altogether—or we will send both watch and chain (without the paper) to any address by insured mail for \$5.60. With the paper, one year, \$6.25.

Address

THE AMERICAN FARMER CO.,
Washington, D. C.



We have secured for the benefit of our subscribers the most improved pattern of Dog Collar.

It is a patent safety link, so constructed that it cannot be pulled open by a dog clinging at the chain. At the same time it is not awkward. We have it made of four different kinds of materials, all same style link, as shown in the cut. It comes in 14, or 16 inches long, according to the size required.

First, is a solid Aluminum Collar, made of the new metal, having much the appearance of coin silver, but almost as light as pine wood.

We will send this Collar free for a club of 4 subscribers, or we will send the Collar and the paper one year, for \$1.50 for sale alone, 1.00.

Second, The same style of Collar in solid nickel silver will be sent free as

a premium for a club of 3 subscribers, or sent with the paper one year for \$1.25 for sale alone, 1.00.

Third, The same style of Collar in nickel-plated steel sent free for a club of 2 subscribers, or sent with the paper one year for \$1.00 for sale alone, .75.

Fourth, The same style of collar in polished steel, for sale with the paper one year for \$1.00 for sale alone, .75.

This chain is not for sale except in connection with the paper.

In ordering be sure and not only specify the material of the collar you want, but also the length, whether 14, or 16 inches.

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THE FARMER'S

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We have arranged with the publishers of "Yonman's Dictionary of Every-Day Wants" to club with THE AMERICAN FARMER. The Dictionary is a closely-printed book of 520 pages, containing articles under 20,000 heads.

It embraces recipes of known merit upon every conceivable subject, such as house-keeping, medicines, farming, stock raising, tree culture, gardening, mining, building, hunting, trapping, tanning, stuffing birds, cookery, toilet, furniture, painting and papering, working metals, navigation, sailing, steam engines, boilers, pottery, charcoal, bricks, drainage, horse-training and doctoring, etc.

It is useless to attempt to enumerate even a hundredth part of this great cyclopedia, which covers every branch of the work and wants of daily life.

It is the result of the life work of the late Prof. Yonman, who probably had more general knowledge about common things than any American since Dr. Franklin.

We can dispose of this wonderful book in only one way—that is, in connection with a subscription for THE AMERICAN FARMER for one year. They will both be mailed, post-paid, to any address for \$1.30. The book is equal to a great library. We feel safe in saying that no collection of 1,000 volumes could be made that would contain the amount of useful information which has been gathered together in this one volume by Prof. Yonman.

Owing to a technicality in the postal laws, it cannot be sent in this combination except in a paper cover. It will well pay, however, the recipient to have it bound in cloth. The cloth-bound edition, containing exactly the same matter, will cost at any bookstore about \$4.00.

We hope our readers will not fail to take advantage of this remarkable opportunity, the like of which will probably not occur again in years. Remember, only \$1.30 for both the book and the paper for one year.

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THE AMERICAN FARMER CO.,
Washington, D. C.

THE AMERICAN FARMER

Established 1819.

WASHINGTON, D. C., AUG. 15, 1892.

Vol. LXXIII. New Series.—No. 16.

HON. A. M. GARLAND.

Superintendent of the Sheep Department of the
World's Fair.



ON. A. M. GARLAND, the Superintendent of the Sheep Department of the World's Columbian Exposition, was born in Kentucky Oct. 26, 1830. His early boyhood was passed at Belleville, Ill. At the age of 12 his parents removed to Springfield, Ill., where he finished his school days under the best teachers of those times in the same classes with a lot of sterling men who have won their way to prominence and fortune. He then graduated in a printing office.

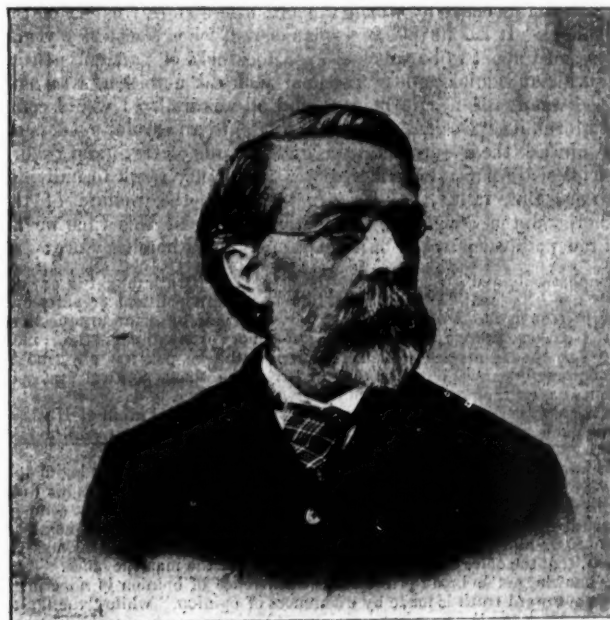
At the age of 21 he was married to Miss Puss Hoppin. By this good fortune he became associated with the Hoppins and McConnells, who were wealthy, influential citizens, and the largest farmers in Sangamon County, Ill. These gentlemen were the most prominent sheep raisers in the State; and at the breaking out of the war their sagacity in foreseeing the effects the war would have on sheep raising led them to increase their flocks enormously. Mr. Garland was associated with Mr. Hoppin, his father-in-law, and lived on a farm surrounded by flocks, and readily became a most ardent, practical handler of sheep on the prairies of Illinois. The handling of sheep then practiced in many respects resembled the pastoral system that has prevailed on the Western ranges, and gave a wider range of experience than has been usual to shepherds of later times. At the close of the war the prairies were fenced and pastoral sheep husbandry was transformed into agricultural sheep raising. It became necessary during the last years of the war to organize for the benefit of wool growers and sheep raisers throughout the States. Mr. Garland was foremost in these measures, and was chosen, by those who knew his zeal and fitness, as the President of the Illinois Sheep and Wool-Growers' Association, which position he filled for many years. It very soon became necessary to form a National organization and to secure legislative aid for the American wool industry. In 1867, after several conventions of delegates from all the States, the National Wool-Growers' Association was organized, with Henry S. Randall, L.L. D., of New York, as President, and A. M. Garland, of Illinois, as Secretary. It is not necessary to say that a valuable work was done for wool growers in securing tariff laws that gave an enormous development to American wool growing. At the death of Dr. Randall Mr. Garland was chosen his successor to carry out the plans and aims for protecting wool growers by requiring foreign wool growers to bear a share of the expenses of running the Government of the United States. This office Mr. Garland filled with his usual efficiency and energy.

It is a singular fact that the names of the men who stood in the breach when American wool growing was in imminent danger of being overwhelmed by the cheap wool countries of the world have not been remembered by those who have reaped the benefits of their labors.

Mr. Garland was the wool growers' choice on President Hayes's Tariff Commission. In his action in this one instance, though acting advisedly, he was severely criticized and maligned, too, by the very parties with whom he had counseled before giving his consent to certain measures. Had he not been a man of Spartan honor, he would have turned upon his adversaries and explained his

course; but he preferred to wait for his vindication, and his conclusion was correct. In 1881 a New York syndicate sent Mr. Garland to Australia to ascertain the situation of wool growing in the Colonies, and to further the introduction of American merino sheep into that foremost wool growing country of the world. The extensive acquaintance with methods and men thus obtained has been of great advantage to American merino sheep breeders.

The American Protective Tariff League, appreciating the experience and wisdom of Mr. Garland as a worker in the interest of wool growers, offered him the position of Assistant Secretary of the Association. He spent two years in the New York office, and then was chosen Secretary of the Illinois Branch of the American Protective League, with office in Chicago, Ill., which office he still has. Mr. Garland is a critical judge of sheep and wool. He is an elegant writer, and a pleasant, affable, courteous gentleman. His name is familiar to sheepmen everywhere.



HON. A. M. GARLAND.

THE AMERICAN FARMER repeats its indorsement of Chief Buchanan's choice of a prudent, capable, conservative Superintendent of the Sheep Department of the World's Fair; a man without prejudices or bigotry; a man big enough and broad enough to fill the place, and in whom the exhibitors of sheep and wool can rely for fair and honorable treatment.

While we feel anxious that all the world should be justly treated, we confess to an intense desire that the United States should be benefited by the competitive exhibits of sheep and their products at Chicago in 1893. In this exhibit of the natural facilities of this country, the skill and enterprise of flock owners can be made more apparent when placed in severe critical comparison. Much must depend upon the Superintendent who has charge of the exhibit, and such a man has been chosen who already has the confidence of the men who are interested.

America for Americans may sound well enough, but at present there are over 20,000,000 acres of our land owned by Englishmen.

THE GRANGE IN POLITICS.

The Work this Great Organization is Doing in Educating Farmers.

BY HON. MORTIMER WHITEHEAD.



THIS YEAR, 1892, the Grange celebrates its 26th birthday, after an existence of more than a quarter of a century. With its achievements in the interests of agriculture known of all men; with its members Governors of States, in Congress, in Legislatures, filling high positions of trust all up and down the land; with its more than 27,000 charters issued to organizations formed in every State and Territory, and its great membership of the very best farmers, their wives and children, holding hundreds of thousands of meetings every year; with every plank in its platform thoroughly tried and proven, it can no longer be said that it is an experiment or an untried theory. It has been weighed in the balance and never yet found wanting when its principles have been properly applied. It is a bright and living fact, one of the permanent institutions of our country, as permanent as are our churches or our schools.

That the Grange is now a fixed fact, and that it is exerting a great influence on many lines of our National life, is now quite generally admitted; that it is making itself felt in politics, in parties, and in legislation, must also be granted by all fair-minded persons.

How far it goes in politics, how it affects individuals and through them its bearing upon parties, and some of its practical results in these matters, will be briefly considered.

Political parties have their "platforms," churches have their "creeds," our forefathers had their "Declaration of Independence." So the farmers have their Grange platform, their creed, their "Declaration of Purposes." It is the foundation, the starting point, of this organization. It contains not the words of an individual alone, but it is the official language of the Order itself. Adopted in 1873, it has ever been the chart by which the oftentimes stormy career of the Grange has been guided. It has its political planks, and when sometimes years ago the good ship seemed about to be wrecked upon the rocks of partisan politics, or lost amid the shoals and quicksands of personal political ambition, firm hands at the helm guided where the needle pointed, and all was well. I would commend the Grange platform, its "Declaration of Purposes," to all careful readers and thinkers, and would ask them—are not its contents words of truth and soberness? If these principles are put into practice, will any injury result to individuals or to our country? But, rather, will they not advance the welfare of the family, the neighborhood, the State, and the Nation? But at this time we are to deal only with the political purposes of the Grange. And here they are:

We emphatically and sincerely assert the oft-repeated truth taught in our organic law, that the Grange—National, State, or Subordinate—is not a political or party organization. No Grange, if true to its obligations, can discuss partisan or sectarian questions, nor call political conventions, nor nominate candidates, nor even discuss their merits in its meetings. Yet the principles we teach underlie all true politics, all true statesmanship, and, if properly carried out, will tend to purify the whole political atmosphere of our country; for we seek the greatest good to the greatest number.

We must always bear in mind that no one, by becoming a Patron of Husbandry, gives up that inalienable right and duty which belongs to every American citizen—to take a proper interest in the politics of his country.

On the contrary, it is right for every member to do all in his power legitimately to influence for good the action of any political party to which he belongs. It is his duty to do all he can to put down bribery, corruption, and trickery; to see that none but competent, faithful, and honest men, who will unflinchingly stand by our interests, are nominated for all positions of trust; and to have carried out the principles which should always characterize every Patron, that the office should seek the man and not the man the office.

We acknowledge the broad principle that difference of opinion is no crime, and hold that "progress toward truth is made by differences of opinion," while "the fault lies in the bitterness of controversy."

We desire proper equality, equity, and fairness; protection for the weak; restraint upon the strong; in short, justly-distributed burdens and justly-distributed power. These are American ideas, the very essence of American independence, and to advocate the contrary is unworthy of the sons and daughters of an American Republic.

We cherish the belief that sectionalism is, and of right should be, dead and buried with the past. Our work is for the present and the future. In an agricultural brotherhood and its purposes we shall recognize no North, no South, no East, no West.

It is reserved by every Patron, as the right of a freeman, to affiliate with any party that will best carry out his principles.

Imploring the continued assistance of our Divine Master to guide us in our work, we pledge ourselves to faithful and harmonious labor for all future time, to return by our united efforts to the wisdom, justice, fraternity, and political purity of our forefathers.

It will thus be seen that the Grange is outspoken as to its position in politics. It does not claim to do one thing and then go about doing another. Its teachings are full of pure politics, but it is partisan, never. It cannot be used as a cat's paw to draw political chestnuts out of the fire either for parties or for individuals. Good men in all parties have nothing to fear from Grange politics; bad men in all parties dread it as does the criminal who "feels the halter draw." The Grange is not a good place for one who loves his party more than his country; or for one who makes the organization or his party secondary to his own personal ambition. It cannot be used by such as a stepping-stone to political preferment.

In politics, in all its lines of work, education is the chief cornerstone of Grange progress. "Knowledge is power," and "education sets free." A knowledge of politics gives the citizen power "to influence for good the action of any political party to which he may belong;" while education sets him free from his political guardians, from the "machine," and from the party lash that has too long rounded up the farmers and, "like dumb driven cattle," brought them to the polls to be "voted."

Webster says, "Politics is the science of Government." What kind of a Government have we? A Republic. What is a Republic? Every schoolboy knows that a Republic is a Government where the people govern themselves—"of the people, for the people, by the people."

How can a people govern themselves if they know but little of politics—the science of Government? They cannot do it, and hence they are misled, misguided, misgoverned by a lot of tricky, trade politicians in all parties. Our forefathers very wisely established the free school at the same time that they established the free ballot. A ballot in the hands of an uneducated voter is as dangerous as a gun in the hands of a child that does not know how to use it—likely to do himself and others personal injury. The Grange supplements the public school and teaches true politics, the science of Government; educates the farmer as a citizen.

Political economy is taught, and political economy embraces every subject which has a tendency to promote the wealth and happiness of a nation. The following are the instructions given the Lecturer of the National Grange in the preparation of official circulars, leaflets, and tracts for distribution to the Grange and agricultural papers, and for discussion at Grange meetings.

Resolved, That the worthy Lecturer of the National Grange be instructed to continue the distribution of subjects for discussion to Subordinate Granges, and that questions of political economy be given prominence, such as gold, silver, greenbacks, National banks, corporations, interstate and transcontinental transportation, and the tariff as it relates to agriculture.

These questions have been and are being discussed, and an intelligent public opinion has been and is being created on all these and other important issues. Grange agitation, more than all other causes combined, secured the passage of the interstate commerce law, the Hatch experimental station law, the bill creating the Department of Agriculture, with its head a member of the President's Cabinet. It advocates pure food, the Australian ballot law, a graduated income tax, election of United States Senators by direct vote of the people, anti-trust and anti-option laws, free delivery of rural mails, and all laws which will protect our people "in life, liberty, and the pursuit of happiness."

As other features of political economy, the Grange is educating the farmer about taxes—equal and unequal, direct and indirect; about finance, scarce money, and dear money, or plenty of money and cheap money; about the money furnished one class of citizens by the Government for one per cent., and for which the people must pay six, eight, or 10 per cent.; about the demonetization of silver for the few, and the free coinage of silver for the many; about tariffs for manufacturers, and free raw materials also for manufacturers—and farmers left out on both counts; about rates of interest for money, higher than the average earnings of capital invested in productive industries, which give capital an unfair advantage over labor; that English two per cent. capital coming over here is absorbing millions of acres of our land under foreclosure because of our high rate of interest; this same cheap foreign capital buying up and running our railroads, our mines, and our factories; the profits all going across the Atlantic.

Having learned these lessons in the Grange, the farmer as a citizen, knowing his rights, and knowing dares maintain, "affiliates with any party that will best carry out his principles," and thus "influences for good the action of any political party to which he belongs."

The Grange educates the farmer as a citizen, but never as a partisan. It is not striving to make any member a Republican, any more than to make anyone a Democrat or a member of any other party. But it does make better Republicans, better Democrats, and better members of all parties. It is like the evangelists or the "salvation army," who preach Christ to the lowly, leaving their converts free to become members of such sectarian church as they please.

The discussions of the Grange have a tendency to bring farmers as citizens together. It teaches that "difference of opinion is no crime," and it is by differences of opinion that we arrive at the truth, while the fault lies in the "bitterness of controversy." Partisan politics divide the people, and create and perpetuate strife by "bitterness of controversy."

The members of the Grange have been learning that wheat, corn, pork, beef, tobacco, rice, or cotton raised on a Democratic farm are controlled by the same laws as are products of a Republican farm; that what will injure one farmer will injure another; that the benefit of one is the benefit of his neighbor; that politicians have divided the farmer's birthright of strength by "pairing" them off one against the other in different political parties, so that their votes don't count except for the benefit of others; that parties are all right in their places, but that the people should run the parties and not the parties the people; "machine" rule is being broken and "bosses" are being taught that the creature must be subject to the creator, that the stream cannot rise higher than its source.

It naturally follows, then, that the American farmer is learning "to take a proper interest in the politics of his country;" that his country is what he helps to make it; that most of the evils of unequal laws, unjust taxation, and the burdens of trusts and monopolies have come through legislation, and that it is only by legislation that relief can come. He is doing "all in his power legitimately to influence for good the action of the political party to which he belongs," doing "all he can to put down bribery, corruption, and trickery;" seeing to it "that none but

competent, faithful, and honest men, who will unflinchingly stand by our interests, are nominated for all positions of trust."

And more, he is leaving independent political action as a last resort; to carry out these reforms inside his party if he can, outside if he must. And it is by this independent thought and action that politicians and parties are being taught many lessons for good in these days. Let no one political party vaunt itself that it now has control of the farmers of this country. The term "independent farmer" means more now than it ever did when spoken by those who would flatter him first and use him afterward. The voters are greater than any political party. So long as men serve their party in preference to their own sense of right and justice, so long must we suffer from unjust legislation.

A few years ago the writer attended the regular three days' annual Summer outing of the members of the Grange of Delaware at the seashore. Among those who spoke to the assembled farmers was their venerable and honored Chief Justice Comegys, and his careful, earnest words will long be remembered. He said that as a citizen of Delaware, years ago he had seen and felt the need of some sort of an organization, outside of partisan lines, where the people of the State could come together and talk on the many interests that as citizens they had in common, and upon which partisans had kept them apart. "So firmly was I impressed with the necessity of some such organization that I put pen to paper and drew up a form of simple rules to govern an organization which I called citizens' clubs. When I had gotten along about that far I heard of the organization of farmers' Granges in the State, and I thought they might fill the place of my clubs. I watched their growth; I have helped you to organize, I have noted your united efforts outside of partisan politics in trying to secure the repeal of bad laws and the passage of good laws in the interests of agriculture, and I have helped you in getting some of this legislation. I have found the Grange to far exceed my hopes and expectations in this direction. Fail not to cherish it, keep it on its present safe lines; realize its value to yourselves and all our citizens. There are great questions yet to be met and settled in our country, and as they are met and settled by the farmers, so will they be settled for the good of the country. You have a duty here; fail not in its performance."

Innumerable instances could be given to prove the practical application of Grange politics for the best interests of all the people. A few must suffice at this time.

Example No. 1.—In its study and discussion of the tariff question it found that while the Constitution of the United States declares that all citizens should be "equal before the law," that in finance laws, tax laws, and tariff laws, farmers were very unequal before the law; that under the tariff of 1883, which was in effect until 1890, while the average duty of all interests combined was about 47 per cent., the manufacturing interests alone were protected to the amount of 55 per cent., leaving the average on agricultural products at only 20 per cent. The famous Mills Bill made it still worse, and commenced by placing 33 articles grown upon American farms on the free list. So the Grange opposed the inequality, and is doing the same to-day with the Free Wool Bill. "Tariff for all or tariff for none." If free wool, then free cloth. This is a plain proposition, and on it the Grange secured for farmers in the McKinley Bill a larger measure of "protection" than they ever had before, and in the event of another party coming into power, they will see to it that the "reform" does not all come off of the products of agriculture.

* * * * *

Partisan speakers, partisan papers, partisan "ways that are dark and tricks that are vain" do not control the average farmer as they once did. He is now an intelligent, thinking, active citizen. Better men are being nominated, and better men are being elected in all parties, and all parties and the country are the better for it. The Good Book says, "When the righteous rule the nation rejoices," and it also says, "When the wicked govern the people mourn."

The Grange in politics is being felt for good because of another reason. It admits to full membership and privileges the women of the farm, the wife, mother, daughter, and sister. It has broadened the field of usefulness of woman, and has prepared her for her place in the true Republic, the full equal of man as a citizen. As are the mothers so will the sons be also, and the end is not yet. Let one of these matrons of the Grange speak on this point:

By and by, when our politicians are at their wits' end to harmonize the interests of capital and labor; when our social science reformers, our philosophers and philanthropists, who look with dismay upon the increased defiance of law, uncertain where to look for remedy; when our prisons and reform schools are uncomfortably filled; when the leaven of the Grange will permeate the loaf of society, and the uncrowned queens of home, our matrons who are faithful to their trust will reap the reward of their labors—brothers and sisters will alike rejoice that the permanency of our institutions is assured, and a grateful people will reverently exclaim: "Behold what the Grange hath done!" What has now been accomplished compared with its grand possibilities is as the first flush of midnight to the sun's meridian glory. The fulfillment of this promise rests with the sisters not less than with the brothers of the Grange.

Holding the position that it now does after 26 years of existence, composed of a people always loyal, law-abiding, church-going, temperate, has the good citizen of any other class anything to fear from Grange politics? Rather should he not join with others who have learned to do so in upholding this great organization in its efforts to advance the best interests of the Republic, uniting with us in the ends before quoted in "Implying the continued assistance of our Divine Master to guide us in our work, we pledge ourselves to faithful and harmonious labor for all future time to return by our united efforts to the wisdom, justice, fraternity, and political purity of our forefathers?"—*The American Journal of Politics*.

A TERRIBLE LEOPARD.

Before it Was Killed it Was Driven from the Bodies of 82 Victims.

The monster was a male leopard, in no respect different from an ordinary leopard in the beauty of its skin and its general appearance, save that for its length, six feet six inches, when it was measured before being divested of its skin, it had an abnormally large head and very powerful shoulders. The skin, after being cured, measured just a trifle over seven feet nine inches.

The brute had had a long career of crime, for its first kill, that of a little girl of four years, whom it sprang upon and dragged into the jungle from the courtyard of the house or bari where the child was playing about sunset or a little later, was notified by the police of Arani outpost in July, 1890. Many shooting parties were organized for its destruction last year. The sporting Rajah of Nator went twice with his elephants to shoot it. A Mahometan gentleman also visited the Arani jurisdiction on the same errand. Several European planters living in the tract of country over which the leopard was known to roam were also foiled in the attempt to kill it. The animal took refuge, whenever search was made for it, in the sugar-cane. Never before—at least in Rajshahi—has a leopard been known to display the same ferocity and daring. There have been tigers that have in different parts of India caused a terrible loss of life; but I doubt whether a leopard has ever been known to kill such a number as 154 human beings in the space of 21 months.

It was killed itself on the 6th of April at Madaha, a village four miles distant from Arhab. It killed one victim only on each of 121 different days; 12 times it killed two human beings on one and the same day, and three times three victims in one day. In one village, that of Bansha, in the Arani jurisdiction, on different occasions it killed seven people; in seven villages it killed no fewer than five people; in four villages, six people; in 12 villages, three people, and in 11 villages, two people. Except in the first year of its criminal career it did not let an interval of more than 17 days pass without killing; twice it went hungry for 14 days. It killed 41 boys of ages varying from one to 10 years, and 22 girls; it found old women of ages varying from 40 to 60 an easy prey, for it killed 40 of them. Of grown-up men, from 20 to 40 years of age, it killed only six. Of the number of persons killed it had been driven off from the bodies of 82; it partially or entirely devoured 72. It was seen to climb trees, and actually ascended a tree once when chased by some villagers. It killed at least one villager who attacked it with a lathi.

It generally killed at evening, its victims being among the children playing in the open space around the bari. It also attacked people before they had retired to rest after partaking of the evening meal, and while they were smoking on the veranda. It broke into houses at night on several occasions and dragged the unfortunate inmates out and devoured them in the neighboring jungle.—*Cuttack Englishman*.

How Indians Bury Children.

One who roamed the Northwestern territory years ago relates the following pathetic story of the burial of a papoose near Seattle, which he happened upon by hearing the mother's lament:

"Creeping nearer," he said, "I saw two squaws at the door of a tepee, cowering over the embers of a dying fire. Both were weeping, keeping the wake for the dead, and one held clasped to her breast a little stiffly-bound bundle. Starting in a low gurgling sound, their wail rose louder and louder on the still night air, until at last it culminated in a prolonged shriek. It came and went, and came and went again, that lament for the dead over the little body encased in its stiff wrappings that had been all the world to her.

"To-morrow would see it pass from her sight forever—to-night it was cradled in her arms. After a little the passionate lamentations subsided, and by and by the mother began to croon to herself a lullaby used by the women of the Flatheads for hundreds of years. Roughly translated it runs thus:

"Swing, swing, little one, lullaby;
Thou'rt not alone to weep;
Mother cares for you—she is nigh.
Sleep, my little one, sleep;
Gently, gently, wee one, swing;
Gently, gently, while I sing,
E-we-wa-wa, lullaby."

"In all my life I have never heard anything so heartrending. Silently I stole away and left the mother rocking her dead baby in her arms.

"Next morning when I resumed my journey I came upon the two squaws, who were arranging the grave for the dead baby. Bending over the tightly-swathed bundle, they kissed it again and again; then, sobbing, began to throw in clods of earth until the grave was filled; then, leaving meat and berries for the child's nourishment, they kissed the ground and slowly turned their steps toward the darkened tepee, never again to hear the patter of the little restless feet, the baby voice, or the clasp of the tiny hands. The baby tongue was stilled forever, and in that Indian mother's heart was an unutterable longing, a grief that could never be healed.

"The Indians always bury with their children the little playthings they have loved in life. Among the Flatheads, especially, the toys and small belongings of the children are sure to be placed under the little tent which is placed over each dead body."—*Helena (Mont.) Herald*.

The poorer natives of Bengal and Bombay are much in want of food that they eat dried sunflower seeds.

SUGAR-BEET CULTURE.

Despite Reverses the Crop of the United States is
the Most Promising.

BY WALTER MAXWELL, U. S. DEPARTMENT OF AGRICULTURE.

SINCE OUR previous communication upon the condition of the sugar beet crop, one of the greatest and most prolonged periods of hot weather that the Northwest has ever known has prevailed over the region of the Nebraska beet fields. On July 18 the temperature rose steadily to 99 degrees, and the thermometer was allowed no respite until the evening of July 28. The maximum thermometer readings of the air in the shade at the United States Government Experiment Station were as follows: July 19, 102°; 20, 103°; 21, 106°; 22, 99°; 23, 95°; 24, 104°; 25, 104°; 26, 103°; 27, 102°; 28, 102°.

This almost unprecedented spell of heat proved too much even for the deep-rooting and sturdy beets. The late-planted tracts, which were still small, and that did not nearly, with their foliage, cover the ground, were considerably dried up. Even the early planted, and where the beets were strong and well developed, went down somewhat under the terrific force of the heat. The rate of evaporation so far exceeded the capillary power of the soil and of the organism of the beet, that during the whole of the day the leaves laid helpless upon the ground, wilted and soft.

On July 26 the soil temperature had gone up to 94 degrees at a depth of six inches, a condition which appeared practically impossible. But on July 28, 29, one and a half inches of rain fell. Never was rain more needed, and never were the effects more sudden and striking. If we just think of the heat of the ground, and a warm rain, which fell very slowly, so that each drop soaked in and was absorbed, the rate of growth was essentially to be very great. Not only did the beets relish the rainfall, corn, oats, and all growth were thirsting for moisture, and have improved proportionably since the rain fell.

At the time of the greatest heat a visitation of insects occurred upon the beets in the Grand Island and Norfolk districts, and the Government Experiment Station at Schuyler is said not to have quite escaped. The attack of the insect, or beet worm, was extremely sudden. The observation of their presence was no sooner made than it was seen that the crop in places was quite badly infested, and the beet leaves considerably eaten. The centers of attack were very localized and confined. Upon the fields at Grand Island we observed that small patches of perhaps an acre were attacked, and the leaves more or less severely devoured, while upon certain plants nothing remained but the bare stems of the leaves, the rest of the field, consisting in some instances of from 50 to 100 acres, not even being touched by the pest. However, the visitation caused a very notable scare amongst the beet growers, and although it is now over, and no permanent damage has been done, the beetmen are prepared to find in the worm a possible future enemy. They are extremely anxious to have its natural history made known, and the most effectual and simple method of treating such attacks in the future, which may be upon a much more destructive scale, placed before them. The Government Experiment Station authorities will doubtless treat the matter with the scientific care and preciseness which it requires, and advise the growers, in a future report, what they shall do in the event of another visitation.

Recently we went over 700 acres of beets in the neighborhood of Grand Island. The crop, on the whole, is looking well. A large part of the 700 acres is in splendid condition, and the beets are big and strong. The latest plantings suffered from the intense heat and drouth, and are only beginning to reassert themselves since the rain.

The Nebraska crop is now one month earlier than it was last year. Last Fall the factories opened up Oct. 15. This year the factory men at Grand Island assured me the factory would be in operation by Sept. 15. It must be remembered that the Spring of this year was very backward, so that it is quite possible that a previous statement made by us will be found practicable, viz., that "a crop can be got ready for the factory by Sept. 1."

From California the latest reports are good, and maintain the excellent promise of two months ago. It is said that California will harvest the greatest yield of beets yet known there. At Chino, as we said in a previous contribution, the crop is from 4,000 to 5,000 acres, and in excellent condition. We were told, however, by one of the company that the Chino factory commenced operations upon the new crop on July 16, and that they have beets to keep them running nearly five months. "All are looking for an excellent return from the beet crop this year."

European reports are not very enthusiastic. From France a late statement says: "It is doubtful if the late beets will give an average yield, whatever the weather may be now. The early planted beets are fine; the roots are long, and will give good weights. Altogether the crop is very irregular, however, in respect to development, and we might perhaps estimate it as follows: One-third good, one-third moderate, and one-third bad." At present we cannot count on an average yield in France. There are everywhere vacant spots or gaps in the stand, where the seeds never came, or they were killed by drouth or insects. These gaps cannot be filled up by any subsequent weather."

From Germany we learn that the agriculturists are not everywhere satisfied.

Complaints come from western Prussia and Silesia that the bad effects of the cold May have never been overcome.

In Austria damage has been done by heavy rains, and the beet crop has suffered. Nevertheless, it is estimated that "70 per cent. of the whole crop will be an average." The remaining 30 per cent. "is beyond recovery."

Holland reports favorably without exception. Also Belgium has a good prospect. In Russia, where the crop in May was more promising than in other countries, a reverse has set in, and it is said "things are getting worse, the beet fields have suffered exceedingly from drouth and insects, so that the hopes of a good crop have been entirely given up." That is grave news from Russia, where the famine has already decimated the resources of the rural population.

HORSE RAISING IN INDIA.

Stupid Ideas Lead to the Decay of the Breeding Industry.

Horse raising in India is practically dying out, and this fact is due to several reasons. In many districts the business of horse breeding has been destroyed by the tremendous increase in the export of wheat and cotton. You may wonder why this affects the horse business, but the cause is very simple. The natives of India are very avaricious, and they go for the business which will give them the most profit. Dr. Rayment, a well-known member of the Veterinary Department of the British army, read a very interesting paper on horse breeding in India recently before the Asiatic Society of Bombay. In the course of his remarks he said:

"In places where formerly one could easily find 15 or 20 mares in a village, now none, or only one or two, exist. The reason of this is that more money is to be made out of grain, cotton, etc., than can be gotten out of horse rearing. The zemindar, or landowner, alive to his own interests, sells his mares and puts his money into bullocks, well-digging, etc. These pay him best, and that is why he sells his mares. If he could be induced to use his mares in the plow, in drawing water for irrigation and the like, instead of his non-productive bullocks, an immense step would be taken in the right direction. But for various reasons—the chief of which is his intense conservatism—nothing will persuade him to do this. The zemindar keeps his mares simply to breed from, and with the exception of leading her in a wedding procession, or occasionally riding her at a walk from one village to another, never uses her. As will be seen, the sale of her produce has to cover the expenses of her keep and leave a margin of profit. As long as grass costs nothing and grain but very little, this is all very well, but now there is not a sufficiency of fodder gotten off the land to feed the plow bullocks, and grass must be bought. To add to this calamity grain, too, has gone up in price. Thus, as the mare does nothing for her own keep, she becomes an expensive luxury instead of a remunerative animal. The zemindar finding that he is losing money disposes of the animals, and is very chary about breeding horses again."

Moving Evergreens Every Month.

I have moved them every month of the year except December and January and had them live. September is a very good time; one year I moved over 100 Irish junipers, from three to four feet high, in that month and warranted them to grow, planting them in different cemeteries, and I had only one to replace. If the season has been dry it is well to dig the holes two or three weeks before planting and fill the holes and around them with partly rotted straw. Then pour in a pail of water once in a day or two, and this will soak the surrounding soil and keep it moist, so that when the tree is finally planted and the soil thoroughly settled around the roots by pouring in water the dried-up ground around will not absorb all the moisture. At planting the rotted straw should be taken out and used as mulch around the tree.

In planting, a portion of the soil should be thoroughly worked in around the roots, trodden down, and then completely saturated with water. Afterward the remaining earth may be shovelled in and slightly pressed down. If the tree is well furnished with roots, left on in digging, there is little risk in the removal, provided sufficient mulch is put around to prevent hard freezing of the ground during Winter. The planting should be done previous to Sept. 20, so that the severed rootlets may establish communication with the earth before Winter. No manure should be used in planting, but if the ground needs enriching it may be applied to the surface the next Summer and forked in the following Spring, the dose being repeated one or two more years if the ground is quite poor.

In digging evergreens the edge of the spade or mattock should be kept toward the stem of the tree, and great care used to get all the roots possible. If the ground is reasonably moist I have found a team of horses a great help in moving trees eight or 10 feet high. I first dig around the tree in a circle of four or five feet diameter, to the depth of the spade; then wrap an old sack or piece of burlap around the stem near the ground and slip a noose of stout rope around it. A team is then hitched to the rope and the tree pulled out bodily. This gets about all the roots within the circle of digging and is less injurious to the tree than prying and grubbing it loose from the soil in the usual way.—*New York Tribune.*

Arizona is suffering from the grasshoppers, but it is lucky that the insects have gone to that State, since there is very little of vegetable life in that section. Whatever green things that grow are suffering, as the swarms of grasshoppers are not fastidious but are content with anything they come across.

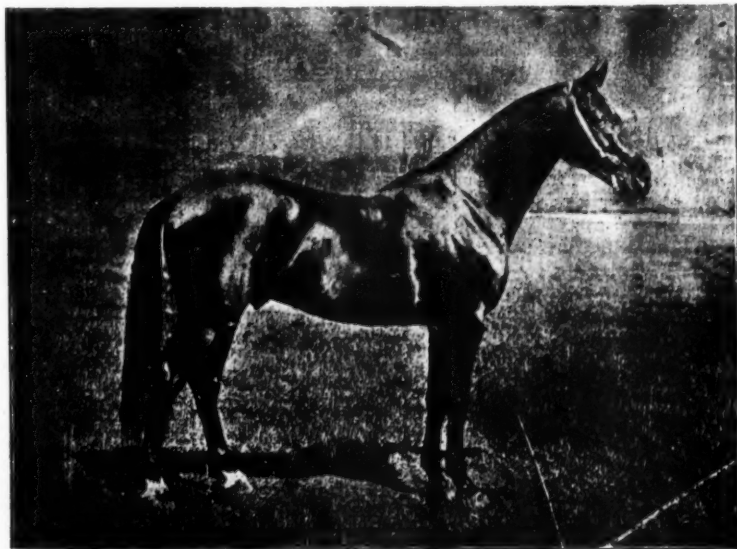
CONSTANTINE.

A Valuable Stallion Which Gives Promise of Doing Great Work.

THE Briar Hill Farm, at Lexington, Ky., owned by Graham & Conley, is one of an instance of success attending the well-directed enterprise and push put in the horse-breeding business. The farm, like many other great things, had quite a humble beginning. Mr. J. R. Graham, the senior member of the firm, was the founder. Nearly 22 years ago he was a shoe manufacturer, and had quite an extensive business, being very successful and having a reputation of making fine foot wear; but as he had a liking for horseflesh he made his first venture in that business in 1870. He secured two colts of Young Morrill through a trade, took them to his farm at Quincy, Mass., and bred from them. These were the first of a large number of horses which he afterward owned. As record breakers they did not prove successful, but this did not discourage Mr. Graham.

The longer he remained in the business the more his liking for horseflesh increased. Deciding to purchase other stock he attended a sale at the Woodburn Stock Farm, located in Kentucky, and purchased two colts. One was by Woodford Mambrino, out of Grace, by Pilot, jr. The other colt he selected was afterward named Mambrino Dudley, and proved to be an excellent piece of horseflesh. This animal got a record of 2.19½. After this he purchased large numbers of horses, and kept his stock farm in excellent condition. A filly which he bought, afterward known as Daybreak, had a dam, Midnight, which produced the famous Jay-Eye-See, 2.10.

Mr. J. J. Conley was taken into partnership in 1885, and with his advent the name of the stock farm secured a wide reputation. Mr. Conley, at the time of going into the partnership, was full of push and enterprise, and, like Mr. Graham, was a native of Massachusetts. The farm at Quincy was found to be too small for the business of the firm, and larger quarters had to be obtained. A place was purchased near Lexington, Ky., containing nearly 234 acres, and all the stock was transferred to that place. It was named Briar Hill Farm, and now the original area has increased over twofold—the farm covering nearly 500 acres.



CONSTANTINE.

It was through Mr. Conley that the firm secured Constantine, a son of Wilkes Boy, for the sum of \$27,000. The animal was put up at public auction, and Mr. Conley, seeing that he was of value, ran the price up until the horse was dropped to him. It was thought that the Briar Hill Farm had secured the animal at a bargain. Mr. Crawford, the late owner of the animal, says of him:

"Constantine's performances during the season of 1891 prove conclusively that he is a racehorse of the highest order. Within less than 40 days after leaving the stud he won the \$5,000 stake for four-year-olds at Independence, from a large field of high-class four-year-olds, winning the third, fourth, and fifth heats in the average time of 2.20½. The following week he started at Cleveland (regulation track), and was second to Happy Bee in 2.20½, 2.19½ and 2.19½. He was officially timed as the second horse in the third heat in 2.19½, which fact was announced from the judge's stand.

"He started in six stakes, winning three and finishing second in three. He lost 15 heats, in 11 of which he was the contending horse. In other words, in 24 hotly-contested heats he won the first or second 20 times, and in those that he lost he fought every inch of the road, showing himself to be a genuine racehorse."

Constantine is powerfully built, and a remarkably well-proportioned horse. He is a beautiful bay in color, and stands 15.3 at the withers. Pedigree experts pronounce him one of the best bred Wilkes stallions living. His speed, courage, and endurance are fully up to his breeding. His trainer, George Bowerman, seems to entertain a high regard for him, and speaks of him thus:

"Constantine is the best racehorse I ever drove, and I firmly believe he will trot in 2.15 the coming season, putting in heat after heat from 2.15 to 2.17, and go as many heats in a day as any horse ever before the public, and eventually train down to a very low record, 2.12, probably better. I never tried to fit him to go a fast mile, and worked him for races, not exhibitions. The best mile I ever worked him was 2.26, and I never even drove him a quarter to see how fast he could go, yet he trotted the last quarter of a third heat in 33½. He trots in but 12 ounces, no quarter boots; can trot in 10 ounces. A better tempered or more cheerful horse I never drove, and a better actor I never saw.

"Constantine is a model of a trotting stallion, and it would be in vain that the most critical observer would seek to find the weak points in his make-up that according to the old notion was supposed to be the result of in-and-in breeding. There are no weak points about him. In conformation, size, gait, speed, disposition, courage, stamina—in fact, in all the qualities that go to make up the ideal trotting racehorse—he is supreme. It is a truism that inbreeding intensifies in the offspring the qualities of the ancestors, and the oftener the blood of any particular ancestors are repeated in a sire the more apt he will be to transmit the characteristics of those ancestors. We may expect to see in the progeny of Constantine an illustration of this great law, and unless the principles of heredity are reversed, it is reasonable to anticipate in him an improvement even upon his great ancestry. Constantine is a sure foal-getter, having covered 21 selected mares the past season, 18 of which are certainly with foal."

Pedigree experts who have analyzed his blood lines pronounce Constantine one of the best-bred stallions before the public. Mambrino Patchen, all things considered, is the greatest brood mare sire that has yet come to light, and Constantine, while tracing directly to Hambletonian through George Wilkes, is one of the most strongly inbred Mambrino Patchens that lives. The well-known trainer, Scott McCoy, who has driven in races where Constantine was one of the contestants, said to the writer that there are but very few faster stallions than he, and added, "no horse that does not beat him till the home stretch is reached can head him from there to the wire, for when in condition, he is one of the best finishers that lives." A very high compliment, coming from a conservative man who stands so high in the profession as Mr. McCoy.

It was the intention to limit Constantine to 40 patrons this season, but his services have been in such demand that quite a number more than that were admitted. He has been patronized by some of the most progressive breeders in this country.

Constantine is entered in several important races to take place this Fall, among them the \$10,000 Charter Oak purse for 2:20 trotters, and Col. J. E. Thayer's 2:20 stallion stake at the New England Breeder's Meeting. His heavy season's service will place him at a disadvantage, but his stout Mambrino Patchen crosses will enable him to give a good account of himself when the contest is close and the heats are split.

Freights and Farmers.

In a book recently published, Profs. Jenks and Ely present very elaborate and careful estimates of the cost of hauling freight in wagons on country roads. The general result of these estimates is presented in the brief but pregnant statement that at present the average cost of hauling 100 bushels of grain one mile is 60 cents. In other words, 60 cents is the cost of hauling three tons one mile. If there is no mistake in the estimate, it is something for the farmer to think about.

The average cost of hauling 100 bushels of wheat one mile by rail is said to be one-third of a cent. From these statements taken together it appears that it costs 180 times as much to haul a given quantity of wheat from the farm to the railway station as it does to haul it the same distance by rail. To state it in another way, it costs as much to haul a crop of wheat a distance of 10 miles from the farm to the station as it does to haul the same crop 1,800 miles from the station to market. The average distance from the farm to the station may not be 10 miles. Suppose it to be half that distance, or five miles. It is then to be said that the average haul by rail to market is not 1,800 miles, but less than half that distance. The conclusion remains that it costs fully as much to haul the crop to the station as it does to haul it from the station to the market.

The lesson which the farmer has to learn from all this is obvious. His worst enemy, so far as transportation is concerned, is not the railroad, but the wagon-road. And what he most needs to do is not to make war against the railroad companies, but to set about the business of cheapening transportation from the farm to the railway. It is right and proper, of course, to resist extortion where it is practiced by railway and elevator companies, but the farmer should not permit himself to become so much absorbed in that business as to neglect the other business, where there is an incomparably more promising field for economy.

A bushel of wheat is hauled by rail 1,500 miles for five cents. That is pretty cheap, and the farmer cannot expect much cheaper railway service very soon. It costs him five cents to haul the bushel about eight miles by wagon. If the cost of the wagon haul were reduced to one cent per bushel it would still be 36 times the cost of the haul by rail for the same distance, and the farmer would be ahead four cents a bushel, or about \$21 on the average crop of wheat harvested from 40 acres of land. Here is the place for economy.

PROGRESSIVE AGRICULTURE.

The Most Recent Discoveries, Developments, and Ideas in the Science of Farming.

The Value of Feeding Stuffs.

THE PROGRESS of agriculture not only implies the growth of a greater quantity of product on a given area, but also a more economical and scientific use of the materials produced. When fertile virgin fields yielded generous crops the cows and pigs were often invited to help at the harvest. Now the tendency is in the other direction. The silo is called on to help preserve the advantages which a green crop has over a dry one. The rations of cattle are carefully weighed and meted out to them at stated times. Even the temperature of the water they drink is taken into consideration in its relations to the efficiency of their food. Not only does the scientific farmer propose to make two blades of grass grow where one did before, but he also is in a fair way to make the feeding power of the two new blades equal to four under the old regime. This is accomplished by a careful study of the food value of the rations employed, a wise admixture thereof and their use in the most digestible form. Each animal should be fed for a purpose. The ox used for drawing heavy burdens should not have the same rations as the steer fattening for the butcher's shambles or the cow furnishing milk. Few active farmers stop to think of the wonderful progress which is making in this direction in economic agriculture. How is this increase in our knowledge brought about? In three ways, viz., by chemical analyses of all the feeding materials; by digestive experiments, and by mixing the feeds which the above studies show will contain the best proportions of the various nutrient ingredients in a manner suitable to secure the object in view.

In respect of the first part of the problem, agriculture must confess judgment to a new debt which it owes to chemistry. In the last few years agricultural chemists have greatly enlarged our knowledge concerning the constitution of feeding stuffs. This has been done largely through the efforts of the Association of Official Agricultural Chemists. This body is composed of the chemists of the agricultural experiment stations and colleges, and of such State and municipal chemists as are officially charged with the analyses of fertilizers and foods. It is a body numbering now nearly 100 members, meeting annually in the city of Washington. Its work is carefully systematized, and each branch of it is placed each year in charge of some specialists, who associates with him all chemists who are willing to co-operate in the work. By this arrangement special work is secured each year on every subject under investigation. As many as 30 chemists have been known to co-operate in one line of experiment. At the annual meetings methods and results are discussed and classified, and processes of investigation unified. The methods of analysis of feeding stuffs have been discussed for eight years by this body of specialists, and all the light which such careful consideration could throw upon them has been wisely utilized. It is not mere National vanity which leads up to the opinion that American agricultural chemists know more of this important matter than those of any other country.

The meetings of this association are held under the auspices of the Department of Agriculture, but its organization and control are entirely independent. Unfortunately the association does not yet have any legal existence. Its deliberations are not held under any recognized legal authority, either of the States or of Congress, and its conclusions are not binding except by mutual agreement of the parties concerned. Nevertheless, it is true that the processes which it adopts are held in such high repute that they become the final reference in all cases of dispute. The Pure Food Bill, which lies in a comatose state in the National House of Representatives, contains a legal acknowledgment of the association, and refers to it all cases of dispute arising over discrepancies in the analyses of suspected food products.

The proceedings of the association are printed by the Department of Agriculture. They have grown from a pamphlet of a few pages in 1884 to a volume of nearly 300 pages in 1891—a volume which is sought for and used by agricultural chemists in every part of the world.

A large part of these proceedings is devoted to the study of the methods of valuing by chemical processes all the materials used for feeding. Naturally, the subject is divided into two great subdivisions, of which the cereals and dried grasses may be taken as types. In other words, feeding stuffs rich in sugar and starch, such as grains and roots, are studied by different methods from those employed in investigating fodders and dried grasses and ensilage. The differences, however, are of minor importance, the general principles of analysis being the same in both cases.

The reader should not now be alarmed lest he be regaled with a treatise in chemical analysis, for he is in no danger. Yet there are a few points connected with the chemical valuation of feeding stuffs which every willing reader can easily understand and many would like to know. The nutrient constituents of a feeding stuff consists, first, of nitrogenous principles which are generally known as albumenoids. These bodies in constitution and digestibility resemble that typical albumenoid body, the white of an egg. But these bodies differ greatly among themselves in their properties and digestibility, although the percentage of nitrogen which they contain is almost the same, viz, about 16. The quantity of albumenoids which a body contains is, therefore, determined by estimating the nitrogen in

the albumenoid bodies and multiplying it by 6.25. In wheat and some other cereals this nitrogenous body takes the form of gluten—in the blood of fibrin, in milk of casein, etc. Other forms of nitrogen in foods, such as amides, ammonia, nitric acid, etc., are supposed to have but little nutritive value.

Next in importance, that class of food known as carbohydrates claims attention. Under this head are included the starches and sugars and the woody fiber. Most important of these are the starches, which compose from 60 to 70 per cent. of the cereals.

The sugars are equally valuable as a food, but exist in comparatively small proportions. They can be separated from the starches by extraction with 80 per cent. alcohol. The woody fiber is divided into two classes, viz., the digestible and indigestible fiber. The latter is usually called crude fiber in analytical tables. The digestible fiber is sometimes designated nitrogen free extract.

It is separated from the crude fiber by boiling with dilute acid and alkali. The heating with dilute acid converts the starches and the greater part of the digestible fiber into sugars of different kinds. Last in the list of valuable nutrient components come the oils or fats. These are composed of vegetable glycerides soluble in ether, petroleum, and chloroform. They are separated by extracting the food material with ether, which is previously freed from alcohol and water. Ether, however, takes more than the fat from foods. It separates also chlorophyll waxes, etc., so that the total weight of ether extract obtained represents more than the true fat.

The ash of a food stuff represents its mineral constituents, or, in other words, the mineral matters which have been derived from the soil. The chief mineral constituents of the ash are potash, soda, lime, and phosphoric acid. It also contains magnesia, silica, sulphur, and often traces of other substances. In the plant these bases are combined with organic acids, citric, oxalic, aconitic, etc., but in burning, these salts are converted into carbonates. The ash as obtained, therefore, does not truly represent the forms of combination in which the bases existed in the unburned plant. The ash constituents have indeed a food value, but it is so insignificant from a money point of view when compared to the other plant components as to find no place in a commercial valuation.

The most valuable constituents of the plant with the exception of albumenoids are elaborated directly from materials supplied in the air. All the fats, sugars, starches, and woody fiber come from these sources. In previous articles it has been shown that leguminous plants, such as clover, peas, beans, etc., take also a large part of their nitrogen from the air. A chemical analysis of a food stuff would include the determination of the carbohydrates, albumenoids, fats, ash, amides, nitric acid, and water; but for valuation purposes only the first three mentioned would be considered. The value of comparative tables of food analyses is much diminished by the fact that data have been obtained by many different methods. It is due to our agricultural interests to have the work all carefully gone over by the methods adopted for the guidance of the members of the Association of Official Agricultural Chemists.

The Money Values to be Assigned to the Several Constituents of Foods.

The chemist having determined of what a given food is composed, turns it over to the farmer for practical use. Cattle growers often have to purchase feeding stuffs in addition to those grown on their own farms, and it is highly important that the farmer in all cases should fully understand the nature of nutrients which he feeds and their commercial value. It certainly would be poor economy to use \$25 worth of food stuffs to make \$20 worth of beef, and yet that is what many hap-hazard farmers are doing. A very superficial study of the problem of animal nutrition would enable them to avoid such costly mistakes.

The money value of a given food depends on the amount and nature of the nutrients it contains; on the method of preparation to which it is subjected; on the skill shown in feeding it in proper combinations, and on the value of the manure obtained.

The relative value of each constituent will manifestly depend also on the purpose in view. Feeding for labor is without question a different problem from feeding for fat. The albumenoid nitrogenous bodies are pre-eminently suited to the nourishment of the muscular tissues, and therefore to oxen, draft horses, and all animals used for labor, this nitrogenous element of the food should predominate. Experience has preceded theory in this matter, as is well shown in the use of oats, a food rich in albumenoid matters for the nourishment of horses for all kinds of work. For a similar reason timothy and clover hay, which, among fodders, are rich in nitrogenous elements, are much prized for similar purposes. When it comes to fat making on the other hand, foods rich in starch and oils should have the preference. But starch not only is highly useful in fat formation, but also shares with the fats and oils the property of supplying animal heat by direct oxidation in the tissues of the body. The value of protecting fattening animals against cold is seen at once in the light of this statement. As the animal is kept warm the quantity of carbohydrate and fat required to keep it warm is diminished, and these nutrients are used for fat building.

The digestible fiber plays the same roll as the starches and sugars in the animal economy, and has practically the same value. The bones are built up chiefly from the mineral constituents of the food, especially the lime and phosphoric acid. The ash constituents of a food are therefore seen to be as indispensable as the others, and yet they have not been assigned a commercial value. In the efforts which have been made, therefore, to establish values for the several nutrients in a food only three have been heretofore considered, viz., albumenoids, fats, and carbohydrates.

About 20 years ago the German chemists first attempted to fix money values

to these bodies. At that time but little was known about the relative digestibility of the same nutrient derived from different sources.

For instance, the albumenoids existing in flaxseed cake and those found in oats or maize were valued at the same rate without considering their relative digestibility. Afterward came the experiments, still going on in so many stations, on relative digestibility. These experiments introduced an entirely new factor into the problem of food valuation, so that now it is not only necessary to know how much of any constituent is present in a food, but also its availability; that is, its digestibility. A food containing 10 per cent. of albumenoids, of which only half is available, would have no more food value than one with five per cent., all of which is digestible. With the fats and carbohydrates the problem of digestibility is even more important than with nitrogenous bodies, for the parts of the latter which escape digestion have still a high manurial value, while the former have none whatever. Fats, starches, sugars, and fiber, therefore, which escape digestion, are a dead loss. The typical food for young mammals is milk, and the composition which nature has given milk may serve to throw much light on the way in which foods should be mixed. It is understood, without any extended illustration, that any nutrient, in order to secure its full effect, must be properly mixed with all other necessary ingredients.

While it is true that the fats can partially take the place of the carbohydrates, and therefore perform in part the functions of the albumenoids, and the latter to a certain extent do the work of the other two, yet this substitution is only partial and temporary, and cannot become permanent. No animal could long remain in a state of health if fed exclusively on any one of these bodies.

Returning again to the subject of milk, we find that there are about three and a half times as much non-nitrogenous organic matter as of albumenoids; or, in other words, the albumenoid ratio is 1.35. In the food of adult animals—hay, cereals, etc.—this ratio is increased to 1.6 or 7. In milk, therefore, it may be said that the albumenoid matter is worth about three and a half times the non-albumenoid, taken weight for weight. In hay and cereals the nitrogenous matter is worth from six to seven times as much as the non-nitrogenous. These figures mean that in milk one part of albumenoid matters is sufficient to enable three and a half parts of other bodies to be well-digested, while in hay and cereals the required quantity is about doubled. But these conclusions must be modified by the results of experiment and practice. It is not necessarily true from a commercial point of view because indicated by the simple composition of the foods in question.

When an attempt is made to find a value from the market price of the separate ingredients many difficulties are encountered. The price at which a food sells on the market is the product of its physiological functions and the necessities of demand and supply. While the nourishing value of a given food is the main factor in fixing its price in any locality, it cannot control its fluctuations in value. The nourishing value is constant. The selling price is constantly varying. Values, therefore, which are true for one locality and one season may be very misleading for another place and a different season.

At present prices it may be said, in a general way, that cottonseed oil is worth from five to seven cents a pound, and flaxseed oil, owing to its use in the manufacture of paint, is somewhat higher. In other words, the two cheapest oils which are offered on the market bring somewhere near the prices named. Maize oil has also a commercial value, but it is not made in large quantities. The oils which exist in most feeding stuffs are never separated for commercial purposes and hence are prized only for food purposes in a crude state. Since the new tariff came into effect, crude sugar may be purchased for about three cents a pound. The sugars which the common feed stuffs possess are never separated for commercial purposes, but their real value in the crude state in which they exist cannot be placed much, if any, above two to two and a half cents a pound. In this country our supplies of starch are drawn mainly from maize. The average amount of starch which can be obtained from one bushel of maize is from 30 to 35 pounds. With maize at 50 cents a bushel, the actual commercial value of the starch should not exceed two and a half to three cents per pound. When potatoes are \$12 a ton the starch which they furnish would be worth the same price as that mentioned for maize at 50 cents a bushel.

Albumenoids as such are not met with in commerce, save, perhaps, in a few drug store preparations, such as dried blood serum. The gluten from starch factories is generally too impure to be regarded as an albumenoid preparation. From a physiological point of view for furnishing animal heat, they have about the same value as the carbohydrates, but from their flesh-nourishing properties they have a higher value. As has already been stated, the albumenoids which escape digestion also have still a high manurial value.

According to the most recent experiments, the relative heat-producing value of the different nutrients is as follows, the numbers representing the quantity of each one necessary to produce a given amount of heat. Fat, 100; sugar, 235; starch, 229; milk sugar, 243; cellulose (digestible fiber), 267.

If the heat-producing power of starch be taken as unity, that of the other nutrients named is shown as follows: Starch, 1; fat, 2.29; sugar, .97; milk sugar, .94; cellulose, .86.

Inasmuch as fat and carbohydrates perform essentially the same physiological functions when consumed as food, we should expect to find an agreement between their commercial and functional values. In other words, fats should cost about two and one-third times as much as starch or sugar. This ratio holds true for the cheap oils already mentioned, but other courses tend to raise the prices of most fats used as foods, especially as human foods. For instance, there is no longer any such relation in the values of gilt-edged butter and fancy lard, for these receive

an adventitious cost in the reputation which they have acquired and the flavor which they possess.

Returning to the relative values of the different nutrients in feeding stuffs, it will be a sufficient indication of the difficulties which surround the experimenter to compare their relative values as given by three American chemists. In the table the numbers express the relative values as fixed by digestion experiments and the market prices of materials:

As fixed by—	Relative value of—		
	Carbohydrates.	Fats.	Albumenoids.
Prof. Wulf, of the Indiana Station	1	3.7	3.7
Dr. Jenkins, of the Connecticut Station	1	4.37	1.68
Dr. Collier, of the New York Station	1	2.5	2.5

Prof. E. Kinch, after careful digestion experiments and comparison of market values, has fixed the ratio for England as follows: Carbohydrates, 1; fats, 2.5; albumenoids, 2.5; thus agreeing exactly with the ratio obtained by Dr. Collier. From a general review of all the recent studies on this subject the general conclusion is that fats and albumenoids are worth about two and a half times as much as starch, sugar, and digestible fibers as foods for man and beast.

The Digestive Value of Feeding Stuff.

It has already been intimated that the true economic value of any given food is controlled largely by the percentage of nutrient materials therein which is available in the animal organism. In the case of nitrogen, for instance, there are many different states in which it may be introduced into the body. When taken into the lungs in ordinary respiration it has little more than a mere mechanical effect, serving chiefly to diminish the rapidity of the action of the oxygen. When consumed in the form of nitric acid, ammonia, or amides its nutrient value is either nothing at all or at most very small. It is only when it exists in the albumenoid form that its maximum nutrient value is reached. But all forms of albumenoids are not equally digestible; indeed, some of them are not attacked by the digestive ferments at all. The albumenoids of flesh, eggs, wheat, maize, and other cereals are practically all available. In the digestion of albumenoids a part of them are consumed in the production of animal heat, a part becomes available for the restoration and nourishment of the nitrogenous tissues of the body, and a large part, usually about one-third, is oxidized to urea. The quantity of animal heat which any nutrient will produce when used exclusively for that purpose can be accurately determined by combustion in an apparatus known as a calorimeter. This apparatus measures the heat of combustion by the rise of temperature of a given weight of water with which the combustion chamber is surrounded. The amount of heat which is produced is measured in calories. A calorie is the quantity of heat required to raise one kilogram (2.2 pounds), one degree centigrade (1.8° F.) in temperature. One gram (1-28 of an ounce) of fat produces about 9.3 calories; one gram of albumenoids or of carbohydrates 4.1 calories. All digestion experiments should be preceded by an exact knowledge of the calorific equivalent of the food to be used.

Artificial digestion is by far the most convenient method of determining food availability. In this process the food in a finely divided state is brought into intimate contact with the digestive ferments at a temperature approximately that of the living body, viz., 98.5° F. After the lapse of a proper time (from two to six hours) the quantity of the food which has passed into solution is determined, and this is taken as the digestive co-efficient.

The digestive ferments are best used in a fresh state, prepared directly from the stomach and pancreas of young animals, usually pigs. The pepsin, trypsin, pancreatin, etc., thus prepared, are more efficacious than when used in the more condensed state of artificial preparations. Much valuable information is obtained in such experiments, especially in the way of determining the different degrees of digestibility of the same food when prepared in different ways. For practical purposes, however, such determinations must give way to actual feeding experiments. This is the crucial test to which every food must be subjected in order to determine its true physiological value. But even in feeding experiments, when conducted on a single animal, many disturbing elements enter. The experimenter has to contend with animal idiosyncrasies and with physiological disturbances due to change of diet, altered environment and confinement. The data of feeding experiments, therefore, should be fortified by many repetitions and by varying the conditions of the experiment as widely as possible. In such experiments the food and drink are first carefully analyzed, the weight of the animal taken, and the weight of food given recorded. The excrement of the animal is carefully collected, weighed, and analyzed. The changes in weight from day to day are noticed, and the condition of the health of the animal studied. The duration of the experiment is from two to six weeks. When large numbers of such experiments are compared the farmer has at his command data of the most practical character to guide him in the preparation and exhibition of his feeding stuffs. The actual cost of the food covering the period of experiment being known, it is easy to determine what the profit or loss has been. When the value of increase in weight of the animal, together with the manurial value of the excrement, exceeds the cost of the food, the balance is to the credit of the farmer. In the United States the whole problem of the investigation of feeding stuffs is still in its infancy. Heretofore cattle foods have been so abundant that the farmer has been more concerned as to the best methods of getting rid of rather than of conserving them. But the day will soon come when beef and pork will no longer be a free gift of bounteous nature. As that day approaches, the farmer's attention will be called more and more to the true principles of food economy, and he will then begin to appreciate at their true worth the labors which our agricultural experiment stations are now inaugurating in respect of the true valuation of foods.

THE WORLD'S FAIR.

The Arrangement for Women and Children, and Some Things Which Will be Exhibited.

Without doubt the women readers of *THE AMERICAN FARMER* are, many of them, looking forward to a visit to the World's Fair next year. Following the example of the farmers in 1876, no sacrifice will be considered too great to obtain a sight of the wonders that will be collected in Chicago from all over the world in 1893. One great difference there will be. At the Centennial the work of women was represented in the most meager manner. They were not recognized as factors in the preparation or in the arrangements. In the coming Exposition, as we all know, they are to have a magnificent building, and not only that, but their work will be shown in the best manner and under their own direction. It will be an epoch in the history of women long to be remembered, and there is no doubt that it will be the means of a wonderful stride forward in every way.

One of the projects of the Lady Board of Managers is the building of what is called a Children's Home on the Exposition grounds designed for the comfort of the visiting young folk and their mothers. There the babies and the little ones may be left while the mothers take a look at the sights in the great buildings. They will be cared for by persons fitted for that work. This will enable many women who could not otherwise see the Fair to visit it with their minds free from anxiety.

The amount required to be raised for the building is \$20,000, and a place 90 by 150 feet, just south of the Woman's Building, has been allotted by the Commissioners for this purpose. The people of Chicago themselves will raise the requisite sum for keeping the building in order during the Exposition. In the explanation of the plan for this home it is stated that besides the caring for the little ones, much will be done for the instruction of the mothers who visit there. The best thought on the sanitation, diet, education, amusement, etc., of the children will be presented. Talks will be given upon the development of the mental and moral nature by improved methods of home training. Other things for the proper care of a family will also be described in the most intelligent manner.

For the little ones themselves there will be an assembly room containing rows of little chairs and a platform from which stereopticon lectures will be delivered to the older boys and girls about foreign countries, their languages, manners, customs, and important facts connected with their history. Kindergarten teachers will be in attendance to supervise the amusements of children who are unused to this kind of training. On the ground floor of the building there will be a large square court which is to serve as a playground. About its edge will be gayly-trimmed booths where the toys of all Nations can be obtained for the amusement of the little ones.

Another attraction which is proposed, is the making of the flat roof of the building into a playground. It would have a strong wire netting going to the height of 15 feet, so that the little folks will be in no danger of falling. About the edges are to be flowers, trees, and vines to make it beautiful. This is the plan which will no doubt be fully carried out, or as far as it is possible.

Another plan which will undoubtedly win the approval of women everywhere is that of the Woman's Dormitory. This has been explained fully in the newspapers, and doubtless is understood by the farmer's household. For those who do not know about it, a word is given here. There is what is called a Women's Dormitory Association formed, which is for the purpose of making arrangements to give women who have no friends in Chicago to provide for them a place to stay, sleeping apartments where they may rest comfortably through the nights. Women are invited to take stock in the company which has thus been formed, and the money obtained is to be invested to carry out this purpose. Here for a comparatively small sum accommodation can be obtained, and many self-supporting women, or those who have no father, brother, or husband to look out for them may be cared for.

In fact, the world has never seen anything like what will be shown the coming year in Chicago. Never before have women taken so prominent a place and looked after their own sex as now, and never before have they been invited so to do.

Perhaps it will be of interest to know that among the numerous applicants for places in the Woman's Building are the following: Red Cross Association of Prussia, the Bohemian Women's Union, the National Women's Relief Corps, the New England Kitchen, the Salvation Army, the Ramona Association of New Mexico, the National Ceramic Association, the National Press Federation, the Woman's Baking Powder Company, the Ladies' Annex to the Los Angeles (Cal.) Chamber of Commerce, the National College Alumnae Association, the Daughters of the Revolution, and the Daughters of 1812. From southern India an unexpected request comes for space in the Woman's Building of the World's Fair to exhibit the curtains, wall hangings, altar cloths, dress trimmings, and other gold and silver embroideries worked by the hands of pupils in the American Lutheran Girls' School at Guntoor. The display is made under the patronage of Lady Wenslock, wife of the Residency Governor.

More than 200 panels of native woods will enter into the interior decoration of the Washington World's Fair building. Some of them will be carved and

others decorated with paintings of Washington scenery and groupings of flowers, fruits, grains, fish, game, birds, etc.

A "model of the figure of Lot's wife in salt" will appear in the Kansas exhibit to represent or illustrate the salt industry of the State.

An Indiana stone quarry company is having a life-size figure of an elephant chiseled out of a solid block of stone. It will be 11 feet high and weigh 30 tons, and it will be on exhibition.

The South Kensington Museum, London, recently paid £80 (\$400) a yard for some lace manufactured in the south of Ireland. It is said that this is the highest price on record, and that the lace is of the most exquisite workmanship. The lace will be exhibited.

The California Capitol will be represented in miniature by an exhibition of pickles. The women of Fresno County will distribute 2,500 pounds of raisins in souvenir boxes. A playing fountain of wine will form a feature of the viticultural display. A rose tree 24 inches in circumference will be one of California's exhibits. The woman having the wild flower display in charge will have as many as possible growing and blooming around the California building, and school children throughout the State have been enlisted in making collections of native flora.

Some Curious Superstitions.

In both Scotland and Ireland the entrance of a bee in a cottage (more particularly if it be a bumble-bee) is looked upon as a certain sign of the death of some one then residing there. In other localities if bees in swarming settle upon dead wood it is regarded as equally ominous.

The ancients believed that iron, as a metal, had great secret powers, and they drove nails into their walls as a protection against pestilence. The Arabs, when overtaken by severe storms in the desert, cry out "Iron, iron," which they think will propitiate the evil spirits who have raised the storms.

Some people wear a strange ring made of a potato with a hole bored through it for rheumatism, and others carry a plain potato in their pocket. The charm is more potent if the potato has been stolen. Almost anything seems to have rheumatism fighting properties, for in southern Michigan a pebble in the pocket serves to ward it off.

On the Eastern Shore of Maryland biliousness is cured by boring three holes in a carefully selected tree and walking three times around it, saying, "Go away, bilious." It is a matter of utmost importance whether the one who performs the spell walks with the sun or against the sun, but no one knows which is the approved direction.

As regards the form of the horseshoe, there is no doubt that among the ancients the crescent form was much favored as having lucky or preservative powers. Ornaments were shaped in this way to drive away evil spirits. The Chinese have their tombs built in a semi-circular form, like a horseshoe, and the Moors use the same form in their architecture.

In many countries of the world, most especially in England, France, and Germany, not only the peasants, but the middle classes and the nobles, believe that bees are curiously and mysteriously connected with the weal or wo of the human family in general. It is a common saying in all English shires that bees do not "do well" when the red-coats are engaged in wars abroad.

The Chinese say that it is the custom in China to burn old worm-eaten wooden idols and cast the ashes into the river, in order to prevent the possibility of the idol being profaned by being trodden under foot. Old idols of Kwanyin are said to be an exception and are retained. It is also the custom in India, among the Brahmans, to throw their marble idols in the river when they become broken.

In Michigan a double cedar knot is carried in the pocket to cure rheumatism, and in New Hampshire men carry a gall from the stems of the golden-rod for the same disease. A small white grub is in the gall, and as long as the grub remains alive no rheumatism can get hold of the possessor. Hickory nuts, the buckeye, and its cousin, the horse chestnut, are other foes to rheumatism in different localities.

The Way Opium is Gathered.

When the land has been prepared, the seed sown broadcast, and covered by the use of a drag, the field is laid off into small beds about ten feet in width, irrigated by little water channels. The plants are carefully tended, and when in bloom the petals gleam like silver. These are not allowed to fall off, but are picked one by one and dried by the women and children of the cultivator's families and then used as a covering for the manufactured cakes of opium. The bare heads or capsules are left standing until ripe enough for lancing. This is done with an implement somewhat like the knives of a cupping instrument, and it is said that much skill is required in making the incision just the right depth, for if made through the walls of the capsule the juice would flow into the cavity and be lost. The cut is made transversely, and may extend two-thirds around the capsule, or to be made spirally, ending beyond the starting point.

This scarifying is done toward evening, and the next morning early the cultivators reappear with their knives and scrape off the exuding juice into vessels held in the hand. Now this is opium in the crude state, and when enough of the juice, half dried, has been collected to form a cake it is wrapped in leaves and put in the shade to dry. In this condition it is purchased by buyers traveling from one village to another. They gather it in small lots, and either work it over themselves or put it into cotton bags and take it to Smyrna, where it is inspected. This Smyrna or Turkish opium is most esteemed in our country and in Europe.—C. I. W.

THE PLANTING OF A TREE.

Profit, Pleasure, and Health all Come from the Work.

BY JULIA ALLYN.

ANYONE interested in tree culture, riding through the country will see that generally there are few young trees coming forward to take the place of the old trees gradually yielding to decay or old age. It is an astonishing fact that farmers living on the same places, the old homesteads, from boyhood to old age, 25, perhaps 50 years, have not in all that time set out a single tree.

Why, anyone would suppose that tree planting on a farm would receive as much attention as the planting of some other things. If these farmers who have been living for years on these farms had planted a few trees every year, what different places they would have. And there is such pleasure in planting trees, and in watching their growth especially about the time they come to bearing.

There are several objects in planting trees—improving the place and increasing its value, beauty of the landscape, shade, and fruit. The farm without trees has a barren look, and in the eye of the buyer it has less value than the farm with trees. What makes a more delightful picture than the green fields in the Spring, or the fields of hay and grain in the Summer with a fringe of darker green of trees or with spreading trees in the fields themselves! And the sun playing upon all—the alternation of light and shade, and different shades of green—what is there more picturesque or more restful to the eye! And fit for the painter is the picture of the homestead with the towering elms bending over it. If we take away the elms and other trees, how different is the scene! Indeed, the great "wealth" of our landscape is in good part in the trees.

And shade, shade for man and beast. It is almost necessary sometimes. It is a health agent, aye, a life saver often. And fruit—it is not necessary to speak of its value. The more fruit we eat the better we shall be morally and physically. It is such a simple, inexpensive thing, this planting of a tree, a fruit tree or a shade tree, and it is still simpler to plant a seed. A little care is required, but only a little.

A farmer's wife who had pleaded for trees determined to provide trees herself for her own comfort. There were no trees around the house and no peach trees on the place, but when peaches were bought she saved every pit and planted it, and not one was thrown away. That was several years ago, and she has continued and is still planting trees. When the peach trees were two or three feet high she turned her attention to other trees, setting out first an elm and then chestnuts and maples. To-day the house is shut in by peach and other trees, and it costs little money and little labor, a little at a time.

Becoming more and more interested, she encroached upon the farm near the house. The path to the barn and the space between is a peach orchard. Now in the shade of her trees she may prepare the vegetables for dinner, and here also with her hired girl does the washing. And all this shade and comfort came from planting a few peach pits.

Of course, all these trees bear natural fruit, as none have been grafted. But our peach-grower likes the natural trees best for this reason: If they were grafted she would know what kind of fruit to expect, but now nothing can be determined till the tree comes to bearing and yields its first fruit. Some of the fruit will be almost worthless, but this does not happen often, for usually the fruit is good enough to preserve; while on the other hand, the fruit of some of the trees will be as luscious and rich as ever grown. In raising natural fruit there is a feature of lottery in it that makes it interesting. When the fruit forms on a "new" tree, there is much speculation as to its value. If it proves to be good, there is the assurance that it is the only fruit of its form and flavor in the world.

This attention to peach culture, if it may be called that, has lifted the burden of daily drudgery and monotony. It is all so interesting and so profitable, for there is something to look forward to, something to enjoy year after year—fruit and shade. Meanwhile, the elms, the chestnuts, and the maples are coming on, and before many years will stretch their protecting arms over the house.

Furthermore, the farmer, whose wife has done so much, has caught the tree fever, and fruit and shade trees are springing up all over the farm, even in the pasture. There ought to be trees in the pasture; it is almost cruel to keep cows in a pasture where there is no shade. Let me advise every farmer's wife to try the "peach plan." Plant the pits a foot apart, the frost will crack them, and when two or three feet high, transplant to the place where they are to stand. They may be planted to shade a porch or a window, and in a dozen nooks and corners where they will beautify as well as bear fruit. The trees grow rapidly, and a hot, barren place may be changed in a short time to a productive and shady retreat. Is it not an experiment worth trying?

A series of experiments conducted recently at one of the experiment stations served to demonstrate that timothy cut and cured early in the season was more nitrogenous and digestible than that cut later; 56.07 per cent. of the organic matter of the early-cut hay was digested, as against 50.7 per cent. of the late cut.

QUIDA ON MEAT EATING.

Viewed from the Esthetic Standpoint by the Authoress.

I have all my life thought that meat eating was objectionable from the æsthetic point of view. Even as a child the fashion of handing round a huge gross piece on an enormous dish revolted my sense of beauty, and I was delighted when, on my first visit to England, a small and thin slice of beef was unobtrusively shown to me behind my left shoulder, to be accepted or rejected *ad libitum*. I quite agree with Lord Byron, who said he would not marry a pretty girl because she had asked for two helps of lobster salad, though if beefsteak had been substituted I should understand it better still.

The biftek a l'anglaise, which seems to be the only idea a foreign waiter ever has when he is asked to suggest something to eat to English-speaking travelers, is simply a piece of hot raw meat, far more fit for the Zoological Gardens than for human food; for, despite of constant and sometimes indignant disclaimers, it is generally believed on the Continent that it forms the staple food of the British Nation—that the strong limbs of the young men, the lovely complexions of the girls, and the bright eyes of the children are entirely due to this nourishment, and anxious mothers of families abroad are constantly impressing upon their offspring, and everybody else about them, the utility and necessity of this panacea, if they wish to be in good health and feel fit and strong. It is a curious fact that in places where this regimen of viande saignante is followed anemia is very frequent.

I have been told, though I have not read it myself, that somebody has written a description of a town where the whole population was vegetarian. The change this would make in all the sights and smells is far greater than we at first imagine. The ghastly butchers' shops which meet one at every turn appear to me an incongruity, not to say more, in this civilized age. They would disappear, as well as the fishmongers', which are hardly any better. Then there are the sausage shops, which, especially in Southern countries, persecute one with their pungent odor. How often have I been driven away while admiring the facade of an old palazzo or the portico of an ancient church by the emanations of the terrible pizzeria half way down the street.

Another dread sight which meets our eyes abroad, especially in Germany and Austria, where much veal is eaten, are the slaughtered calves paraded about the streets, a dozen or two of them hanging over the sides of the cart. There can be little doubt, too, that our kitchen and dining-rooms would be far sweeter and more attractive if no animal food was ever brought into them. The eyes certainly would be gainers, and our olfactory senses, too. In pictures and in poetry the tables are laid out with luscious fruit and sparkling wines, whenever charming and pleasant scenes are to be conjured up before our minds. When coarseness and discomfort are portrayed, "men brought in whole hogs and quarter beeves, and all the hall was dim with steam of flesh."

The Food Supply of the World.

An article at the end of the reports of the judges at the International Exhibition held at Paris in 1889, the London *Mark Lane Express* observes, bears on the food supply of the world. It is from the pen of Mons. Louis Grandeau, Member of the Conseil Supérieur de l'Agriculture. The task given to the judges of the agricultural section of the Exposition included the study of the countries represented in the Champ de Mars, in the Esplanade des Invalides and in the Galleries of the Quai d'Orsay, and the examination was to be carried out officially only upon the countries whose produce was accompanied by statistical documents, the latter to enable them to estimate the general conditions and numerical valuation of the agricultural production of each. The pages which follow the judges' report give a resume, as exact as it is possible for the reporter to make by the aid of the productions shown, of the agricultural situation of the countries which took part, as regards the statistics, in the admirable display of 1882. Mons. Grandeau writes:

The total population of the globe, which was 1,401,000,000 in 1880, was estimated in 1891 at 1,489,000,000, an increase of 79,000,000 in 10 years, being 5.64 per cent.

The known production of wheat and rye has risen to 3,440,250,000 bushels annually, and that of maize to 2,750,000,000 bushels, one-third of which is used as food for man. By estimating 687,500,000 as the amount of other cereals which are used as food, one can give the figure of 4,950,000,000 bushels as annually consumed by man. If this sum is divided amongst the inhabitants, it will be found that each person consumes about 3½ bushels of cereals a year. The annual production of wheat in the world is about 2,131,250,000 bushels, which only gives about 1½ bushels per head—a very insufficient figure—while rye allows ½ of a bushel per head, making a total of the two latter of 2½ bushels per head.

The Growth of Canada.

The figures on last year's census in Canada are now coming out in very interesting bulletins. From that on manufactures it appears that in ten years the population in towns and cities has increased 38 per cent. and those engaged in manufactures 58 per cent. The establishments have increased 76.8 per cent., the capital employed 102 per cent., the wages paid 74 per cent., and the annual product 62.2 per cent. Each workman in 1881 received \$284.26, and in 1891, \$343.26; in the former year each produced \$1,467 worth and the latter \$1,600.

ABANDONED FARMS.

The Cause of this Evil in New England, and the Remedy Therefor.

BY F. J. WILSON.

THERE WAS a time when New England farmers made money out of general farming, but that time seems to have been past with a majority of the farmers. The West is producing such crops in large quantities, and at such a cheap price, that it is almost impossible for the New England farmer to enter into competition with the Western farmer.

The soil of New England in a good many places is worn out, while that of the West is almost virgin. Wheat and barley were the old stand-bys of the Eastern farmer, but they are so now no more. Barley was considered to be the best-paying crop on the farm, but the development of new fields in the great West so increased the supply of this cereal that its price has dropped considerably.

In cattle raising there is also very little money for the farmer of the East. The great Western ranches raise the cattle, send them to Chicago, and dressed beef is sold to the New England farmer almost as cheap as he can raise it.

What is the cause of this? The reason is very simple. The owners of these great ranches have large numbers of cattle, and while the profit on one animal may not be much, yet when they sell a large number the profit is quite an item. They do not have the trouble which the Eastern farmers have in raising the cattle. The cost of feed is a mere nothing; that is the reason why they can sell their animals so cheap.

We now come to the slaughtering-houses in Chicago. The men who own the slaughtering-houses purchase the cattle for a comparatively small price. They save everything. The meat is sold to the people; the bones are used; the skin is saved; the hoofs are put to use, and even the blood is sold. So many cattle are killed that matter which would be refuse to the farmer who kills four or five animals a year rapidly accumulates and is sold. The money obtained for this refuse material enables them to sell the food-beef at so low a price.

The immense fields in the West have so increased the supply of cereals, and decreased the value of them, that there is but little profit left for the Eastern farmer after he has paid for the fertilizers necessary to grow a fair crop. In fact, it looks as if the whole of New England will be turned into a truck farm. However, this may never be. Some of the farmers who reside in this section of the country have perceived the utter uselessness of trying to compete with the products of the West, and have, therefore, turned their attention to something else. On the other hand, large numbers of farmers have become demoralized at the competition of the farmers of the West, and have left New England to farm elsewhere. This is the reason of so many deserted farms in Massachusetts, Connecticut, Vermont, and New Hampshire. This question has, however, been discussed for some time, and there is no need of us going into further details. Remedies have been suggested, tried, and, in most cases, resulted in a failure. The best suggestion is to raise those things which can be profitably raised, and in which the competition of the West is not so great.

The Massachusetts State Board of Agriculture has looked into the matter carefully, and the result of it was the publication of a book descriptive of farms in that State "abandoned or partially abandoned." The cause of this condition of affairs the book attributes to the migration of all available young men to other sections of the country. If this state of affairs is so it is deplorable. What causes the young men to leave their native places? Are they dissatisfied with farming, or have they gone West to engage in it? The answer might probably be found by the latter question.

The book describes farms conveniently located and situated but short distances from good markets which can be bought for less than \$10 per acre. Certainly with land as cheap as this an enterprising farmer could make a good living. We do not deem it necessary to quote from this book, since land can be bought in almost every part of the State at the same rate. All those who are interested in the matter can secure a copy of the book free by addressing the Secretary of the Board of Agriculture, William R. Sessions, at Boston, Mass.

Connecticut is also suffering from the same trouble which affects Massachusetts. The Secretary of the Board of Agriculture of Connecticut has made careful inquiries, and has found that there is a great decrease in the price of land in the State. He wrote to all the farmers asking them at what price they would sell their farms. After the returns were all in he found that the average price of land per acre was \$28, but this cannot be accepted as the true average. The prices given were much higher than could be obtained at an actual sale. The average price of farm lands in the State, as given by the census of 1880, was \$49.34 per acre, or \$21.34 more than the average of the present census made by the Secretary. The replies to the Secretary's inquiry disclose the fact that in a good many cases land containing a good number of acres can be bought at \$8 per acre. The fact is further disclosed that farms with buildings in good repair could be bought at one-third the price that was asked 12 years ago.

The other New England States are in the same condition as the two States we speak of, and it is therefore not necessary to deal with them individually. We will take them as a whole, and what will be a remedy for one will be a remedy for all, since the cause which depopulates one is the same which depopulates the rest.

We will consider all those things which are left for the New England farmer—no, not all, for it would be impossible to enumerate them, but we will give a few of the things left. Undoubtedly there are a good many farmers who have tried some of the branches of agriculture which we would recommend, but who have been unsuccessful. We will not stop to investigate the cause of their failure. Without a doubt it was in themselves and the manner in which they conducted their business.

In sheep raising there is good money. A prominent sheepman once said to me when I asked him what was the best paying investment on the farm: "The American hen is the best paying investment on the farm; next to her comes the sheep." This answer somewhat surprised me, as it will also you, but nevertheless this man backed up his statement with such an array of statistics and figures that the truth of what he said was undeniable. There is no doubt but that there is profit in sheep raising, but a still greater profit lies in raising early lambs for market. This is the most lucrative part of the business.

Fruit raising is another branch of agriculture which has attracted the attention of some of the New England farmers. Already those who have set out orchards are reaping the benefits of them. A new orchard cannot be made to pay for the first two or three years of its existence, but when it does commence to pay its returns are sure and steady. Like everything else in farming, there are numberless insects which the grower has to combat, but if care is taken and proper remedies used the grower will be the victor in nine cases out of ten.

A short time ago, if we remember correctly, in one of New England's towns the fruit growers established a sort of co-operative factory, which has given general satisfaction. For several seasons previous to the establishment of the factory the fruit market had been glutted, and the prices obtained barely covered the cost of picking and other expenses. A good many farmers did not market their fruit, and this necessarily entailed a loss. After two or three seasons of such bad luck the farmers put their heads together, and the result was the origin of the co-operative factory. Each man paid his share of the expense toward erecting the building. Now, when the market price of fruit is low, the growers take the fruit to this factory and it is canned. From the factory it is shipped to dealers, and thus the fruit grower gets a better price for his products than if he sold them at the low market price.

Apples are also grown quite extensively in some localities. The fruit is picked over. The best is sent to the market, while the inferior fruit is kept back and made into cider and cider vinegar. And, by the way, the manufacture of these two things has grown within the last few years to be quite large, and to-day there are organizations of cider and cider-vinegar men. This is confined to the men who raise the fruit and make the articles, and the Legislature of several of the New England States have passed laws which protect them and their industries from the unscrupulous men who put the adulterated goods on the market.

Grapes are rapidly coming into favor. Twenty or more years ago the vineyards of New England were limited, but now the number and acreage has increased many fold. Wine is made from a good lot of the vintage, but as yet it has not secured any particular reputation among the connoisseurs. The grape growers consider it profitable to market the grapes at the winery at \$15 per ton.

In New York hop raising is a very profitable industry. The culture of this plant is extending into New England, and as the climatic conditions are as favorable as those of the Empire State, there is no reason why success should not attend the culture of the hop.

At a meeting of one of the farmer's institutes, held recently in New York, Mr. S. R. Eastman, a successful hop-grower residing in Oneida County, gave his experience in hop raising. He said that since he began experimenting he is able to grow nearly as much hops on 65 acres of ground as he did 20 years ago on 80, and that at the same time he was maintaining the fertility of his farm. He has a fixed course which he follows truly, and he does not deviate from it. For growing his hops he selects only the best and most firm roots. He warned people about setting bruised hops, and he cited a case of where a man run his hop roots through a straw cutter and wondered why they did not grow. He advocated making the seed-bed of a hop farm as good as an onion bed, and to be liberal with the proper fertilizers. He stated that if these directions were followed, and that if only the best roots be bought, a hop yard could be kept in the best bearing condition for 25 years or more.

There is a large field for dairying in New England, and it is gratifying to see the number of men who have embarked in the business and are making a success of it. If good butter is made at home it will not take long to find a market for it, and a steady one at that.

Truck farming pays better than any branch of agriculture, and it has often been said that more money could be made off of one acre of truck than could be made from 10 acres of farm land. But if a place for a truck farm cannot be obtained in close proximity to a city, it is hardly worth while embarking in the business. The profit in truck farming is greatest when the vegetables are gotten in market early in the Spring. We know the case of a truck farmer living a short distance from Washington who has become quite a land owner, the money coming from his truck farm. This man has four acres, and has a place in four markets for the sale of his truck. He does not believe in commission merchants, and all produce is sold under his own personal supervision.

FROZEN MEAT.

An Industry which is Assuming Great Proportions in New Zealand.

BY J. N. INGRAM.

IN THE Winter of 1882 the New Zealand Land Company, in the Province of Otago, on the South Island, concluded to try the experiment of exporting frozen meat to Great Britain. They engaged a sailing ship of 1,200 tons, and equipped it with the necessary outfit for receiving the goods. The vessel had the capacity for carrying 400 tons of meat. It is well to state here that none of the ships engaged in the frozen-meat trade in the Australasia make up more than one-third of their cargo in meats. Five thousand sheep were slaughtered and dressed for the voyage to London. The carcasses were submitted to a freezing process and placed in sacks for shipment. They weighed from 75 to 90 pounds each, and were in fine condition.

The New Zealand meats are of superior quality, and have the finest flavor of any in Australasia. The plains of the islands are covered with roaming thousands of cattle, and the hills swarm with flocks of sheep. Immense supplies reduced the prices in New Zealand. The markets were inundated, and the rates low. The cattle kept increasing, and foreign demand was desirable. Removed from the great paths of ocean commerce, and situated at the antipodes of the world, remote from the marts of England, the exportation of live cattle on such extended voyages was not possible. The herds would consume their value in provender on the great sea routes from the ports of New Zealand to the markets of England.

While the dense population of the British Isles turned longing eyes to fat mutton and juicy steaks in the New Zealand Provinces, the question of economical exportation of meats was a problem of National interest. The ability of the poor in the overcrowded cities of England—who banqueted on meat once a week—to obtain steaks, and the establishment of a foreign market for the Australasian flocks and herds, were involved. The demands for fresh meats in Great Britain had become greater and greater every year, and the supply of sheep in the Queen's realms had annually decreased. The price of mutton advanced on the English markets until the luxury was placed only within the reach of the prosperous. The decrease in the production of cattle on the British ranches, and the disturbances and interruption of meat production in Ireland by its constant broils and upheavals, complicated and reduced the food supply, and raised the price in the markets in the old country.

The damp climate and cold Winters in the English Isles have never given their meats a premium for richness. The advent of the fat and butter, like muttons and steaks from the luxuriant grasses on the semi-tropic plains of New Zealand into the stalls of London butchers, was watched with concern. On the 18th of February, 1882, the first ship of frozen sheep sailed from Port Chalmers, near Dunedin, on the South Island of New Zealand. In the middle of May it arrived at the docks in London. The meat was put ashore in fine condition, and disappeared from the markets at 15 cents per pound; the same meat was sold in the markets of New Zealand at five and one-half cents per pound.

The extraordinary character of the mutton gave it instant popularity and brought it into extended demand. More ships were called for, and more mutton was wanted. The laboring population awoke to the sensuous dream that it was among future possibilities to live in England and enjoy fresh chops for breakfast. The old and tough patriachs which had done service as oxen under the yokes of British drivers for decades were expected to retire in favor of the young and fresh animals from the antipodes.

The Australasian meat question had found solution, and the introduction of fresh beef and mutton from the countless herds and flocks in the South Seas into the home country was established. The exportation among the factory towns of Birmingham, Leeds, Sheffield, and the mines of Cornwall, England, was expected to reach large proportions.

The source of their supply was almost exhaustless, and in a short time they began to use the meat from New Zealand. The demand was great, loud, and earnest. "Send on more meat," was cabled from Britain to the ports of the Australasia. The shipping companies of New Zealand got their vessels ready to engage in the transportation of frozen carcasses. The steamship lines gave orders to British shipyards to construct new and additional vessels for the New Zealand meat trade.

In April, 1883, the first steamer, the British Queen, loaded with 10,000 frozen bodies, left Port Lyttleton, near Christ Church, in the Province of Canterbury, New Zealand, for the Thames. The meat vanished like apples in June. In the following month two more steamers of 2,500 and 3,500 tons also sailed with cargoes. Their outputs promptly disappeared.

In June the steamer Ionic, of 4,000 tons, turned its prow toward England; and in July the Doric, of 4,300 tons, followed suit. Both vessels were filled with beef and mutton. Ships began to sail from the ports of the North Island of New Zealand packed with frozen beef.

The demand increased, the exportation enlarged, and other and larger vessels were ordered from the English docks. Sailing ships of swift passage and large tonnage were engaged, and the current of Australasian meats began a strong and steady flow to the British Isles. The people in England became more jubilant, and John Bull's press was full of encomiums. The New Zealanders were called

good fellows, and urged to extend their supplies, enlarge their cargoes, and quicken their speed.

The length of the voyages around the Cape of Good Hope was 45 days by the steamers and 98 days by the sailing crafts, but the process of freezing was so perfect, the equipments so thorough, and its manipulations so skillfully directed that the meats stood their long passage around the African Continent in good condition, and landed in England as fresh and sweet as the day they left the Zealandian harbors.

The cab drivers on Fleet street who had been accustomed to lunch on brown bread and milk were able to order steaks; the dwellers in the alleys in Glasgow, Liverpool, and Dublin could have chops at least on Sunday. The famished muscles of many sons of toil became stronger, their bodies more erect and steps more elastic.

The New Zealanders put their best foot forward and shipped only their finest beef and choicest mutton. The high reputation of the Australasian exports were maintained and the fame of its meats increased. The demand was kept constantly at high water mark, and its standard has not been suffered to decline.

As the regular seasons, bountiful rains, luxuriant grass, mild climate, and extensive plains were suited to the growth of herds and flocks, their multiplication has been regular and steady and their numbers vastly added to.

The creation of a new and profitable market for meat has attracted numbers of other colonies into the cattle business, and its proportions have been rapidly growing. The supply is keeping pace with the demand, and is in excess of the transportation facilities. The vessels which convey the goods to England, being able to carry only a fourth of their cargoes in meat, have to make up the remainder of their ballast with other freight. The vessels must also have full freights on return trips, or their voyages will not be profitable.

The other necessary freights to and from the British ports are not accessible in sufficient quantity to load all the ships required for the demands of the frozen meat trade, or to keep up with its increasing proportions. The bulk of the meat exportations have, therefore, had to be restricted to accord with the ratio of other freight supplies. By proper regulation and distribution of colonial exportations, and the admission of beef among their cargoes, the business has been able to gradually expand.

Every vessel cannot admit or carry the frozen goods. The ships have to be specially arranged and fitted up with a costly apparatus for freezing and preserving the meats on their long sea passage. The vessels have to spend days in the warm zones of the tropics; they have also to cross the Equator under the burning rays of a torrid sun, and are subjected to an intense heat along the equatorial line. The great heat of the hot belt must be overcome, the temperature of the freezing rooms maintained, and the freshness of the meat preserved, or its quality would be impaired and its sale destroyed. Patent dry air refrigerators are used on the ships. The bodies of the animals exported are subjected to the following process and kept in the following conditions: When the cattle or sheep are slaughtered and dressed, they are carried aboard the ships and placed on hooks in the packing room, an apartment usually large enough to hold from 4,000 to 6,000 bodies.

The machinery for preserving the freezing temperature is kept in action and propelled by an engine of from 60 to 75 horse-power, according to the size of the vessel. The apparatus injects dry atmosphere of a temperature of 65° to 79° below zero, and can discharge from 3,000 to 4,000 cubic feet of air in an hour. The machine is kept in action during mild weather throughout the voyage, but in cold climates it is not operated, and neither during the cool hours of the night. Two tons of coal are usually necessary to supply the engines and keep the machines in motion for a day and night. On arrival at the English ports the meat is transferred to refrigerators until sold.

The first year the colony experimented on the exportation of frozen meats it exported 180,000 pounds and received for it \$92,000. The business has since steadily and annually increased. In 1889 \$400,000 worth of frozen beef was shipped. Nine hundred and ninety thousand frozen sheep, valued at \$3,200,000, and 118,000 frozen lambs, worth \$299,000, were also exported during the same year. The value of the exports of meat have grown within seven years from \$92,000 to \$3,300,000 per year. The annual shipments of carcasses now average over \$3,000,000 in values. The yearly increase in the value of exports sustain a ratio of over half a million dollars.

The capacity of the Australasia for the supply of meats is estimated at 750,000 tons annually. To calculate that a vessel could carry 350 tons of meat as one-fourth of its cargo, it would require a fleet of 2,250 vessels to transport 750,000 tons of frozen meat. That the Pacific Ocean will never be covered with such a mass of ships is not probable. Full transportation facilities, therefore, for the capacity of Australasia's meat supply has not yet been developed; but all the new ships ordered for the trade have accommodations for carrying 500,000 carcasses each. If some large vessels like the defunct Great Eastern—which laid the Atlantic cable—were built, such extensive freezing rooms could be constructed and such immense cargoes of bodies transported that the freight profits on frozen meat alone might yield paying returns for both voyages. By loading with rock ballast, the delay at British ports for return cargoes would be avoided, and the vessels devoted exclusively to meat carriage.

Freezing rooms, with ample accommodations, could be provided in London for the storage of the cargoes until sold, and express refrigerators could distribute the meats by trains throughout the British Empire. If vessels can be constructed and manned large enough to hold sufficient cargoes of meat to pay from one voyage a freight profit on a round trip, the transportation question would be solved, and an outlet opened for all the surplus cattle on the Zealandian plains.

THE GRANGE.

Some Reasons Why Farmers Should be Members and Share its Benefits.

BY H. TALCOTT.

THE SOCIAL and educational features of the Grange are not fully understood by farmers who are still outside of its membership, and its fair importance and opportunities are not appreciated by them as they should be.

The Grange as a school in any community for farmer's families presents the most successful and happy introduction young people who live in isolation of the farm can ever secure. There is no such opportunity at church or in any citizen's association as can be found within the Grange. Here families of all the different religions and political persuasions are brought together several times each month, while their faith or beliefs are never questioned in the Grange, nor are their political party ties. All great questions involving principle, policy, or a wiser course for individuals or a people to adopt, are so fully studied and discussed that it enlarges and develops its members into men and women of a broader and more noble type. It also lends a power to put away bigotry and superstition, and soon teaches its members that the true importance and value of mankind rests wholly upon their own individual merit and ability, regardless of professions they may make, and that in or out of every church or society good people may be found in abundance. This knowledge, accompanied with the most intimate acquaintance with each other, is very enjoyable; it relieves farm life of its most dreaded monotony, and inspires good breeding and higher intelligence in its members to keep even pace with their fellows. It stimulates intellectual research, and makes study not only pleasant but profitable. As there are 13 to 14 officers in a Grange, about evenly divided between the sexes, and as these officers are elected annually, it gives a wonderful opportunity to its membership to soon become ready readers or speakers, and from this source of inspiration and education farmers are fast coming to the front as law makers and honorable and efficient members of society wherever placed. At the early age of 14 years our children should be introduced into society and made familiar with its means of advancement; and there is no such place where it can be so safely and wisely done as in the Grange. Youth must pass the boiling stage, the fun and frolic so necessary to become good and great. Good breeding should be inculcated, and here it is that parents can furnish them the very best of society, while receiving this most important lesson of life. When young we learn by example more readily than by any other force, and here it is that a kind and watchful care can be exercised by parents, while the child feels under no great restraint, but thinks he is having his own way, and a grand good time. Association with good men and good women is elevating, and its influence is benefiting to us all. It makes us better and more noble almost unconsciously, and we try to imitate virtue with all its adornments and put away vice. The Grange can be conducted upon the highest order of literary merit and improvement its membership is capable of sustaining.

There is no limit to its possibilities only in the capacity of its members themselves. Consequently, advancement is the watchword, and improvement, mentally and morally, is the rule. Its exercises are so varied that old and young are equally interested and made to better understand the truth of life. We live not for ourselves alone. Old people sometimes forget they were ever young, and that necessity in youth for innocent sport and amusement should be tolerated and enjoyed by all.

These social visits in a community are also a very great saving of time, and on economic grounds alone they should be encouraged and accepted. To meet one's neighbors so often gives at our intermission times an exchange of neighborhood news and gossip so necessary to be accurately given that that alone is worth many times the cost of the Grange.

This extended community (Subordinate Grange) generally reaches out to cover each five or six mile square township in America, and from this organization comes a higher one, namely, the County organization, where we meet several times a year with the best of our Subordinate Grange. Productions and work get a revision at these meetings, while our acquaintance and education reaches out to many others for miles around. These Pomona Granges, or County Granges, act as supports for the lower Granges, and are intended to make the work done in Grange more uniform, and also impart instruction here to better accomplish the results for which we aim.

Above the Pomona Grange come the annual meetings of our State Granges, composed of chosen delegates so elected because of their superior knowledge of the Grange; and in this latter body come all our law making to govern this vast body of men and women in every State, and render their work more efficient and productive of greater good. There is no greater or more noble work possible for any organization to accomplish than is within reach of the Grange, and its 25 years' experience has most truly fitted it for this noble mission.

I was glad to see in the last two issues of THE AMERICAN FARMER words of encouragement from the pen of our gifted lecturer of the National Grange, Brother

Mortimer Whitehead, of New Jersey. I hope others of the Order will assist THE AMERICAN FARMER and help to swell its influence and patronage, and add thereby one more advantage to agriculture, and one more potent voice to help control our national councils for the upbuilding of the tillers of the soil.

Assyrian Writing.

Many books grow old and are soon illegible. Paper, the bark of trees, parchment, vellum, cloth, and most of the substances on which writing is done are liable to mold and decay, or to be consumed by fire. But there is one style of writing which has withstood the ravages of nearly 30 centuries, and is as perfect to-day as it ever was.

When Henry Austen Layard began in 1845 his explorations among the heaps and mounds on the banks of the Tigris opposite the city of Mosul, no one could have foreseen what would be discovered. There was some doubt as to what city had formerly stood there. Four hundred years before Christ, Xenophon marched his 10,000 Greeks across that plain, encamping near what was known as the ruins of the city of Larissa, little dreaming of the perished splendors which once adorned that plain when it was the site of the magnificent capitol of the greatest empire of the earth.

Skeptical writers had doubted whether there ever was such a city as Nineveh, a great city of three days' journey. No such city could be found, nor was there any positive proof as to its location, and so the book of Jonah was held to be a very uncertain old story. But it was not long after Layard commenced his work of excavation before strange shapes were thrown up to view. Buried beneath heaps of earth were the wrecks and ruins of halls, temples, palaces, images, and idols, with portraits, inscriptions, statues, and memorials, which sufficiently proved that there was the site of the city where Jonah preached, Nineveh the great. In one of the great palace halls which was explored was found a royal library of books written on tablets of clay. Some of them were several inches long, others were very small, many were broken in fragments; but there were the characters—shaped somewhat like arrow-heads, and called the *cuneiform* characters—which apparently were made by pressing with the end of a stick upon the soft clay. This clay when baked or hardened became practically indestructible, or at least exempt from decay, from mold, and from fire; and so these records of the ancient Assyrian empire had come down to us unharmed.

But no man could read the writing. The capitol had been destroyed, the empire overthrown, the nation itself had rotted down through vices and villainies, and its very language was forgotten. No living man could decipher the words inscribed upon those tablets; and yet, after months of patient study, learned men puzzled the inscriptions out. They at length found the same inscription in different languages, and when they could read one language then they could pick out by degrees the meaning of the other. And so after months and years of study, the Assyrian language is known to-day, and thousands of these tablets have been translated into modern tongues. One of them is known as the Deluge Tablet, of which a translation has been made which agrees in very many particulars with the account of the deluge found in the book of Genesis.

So, while these old records have been buried in the wreck of burned and fallen palaces for ages, at last they are brought forth to show that the facts contained in the Scriptures are also to be found in the ancient histories and traditions of those time.—*Little Christian*.

It is of no use to try to escape the torments of the ever busy mosquito. A traveler who has been as far south as Patagonia and as far north as Iceland says that mosquitoes are to be met with everywhere.

Matches and Pins.

Matches and pins being among the most common things in daily use it is seldom that any thought is bestowed upon them. Matches that are ignited by friction were first made in 1829, before which time they were made to catch fire from a spark struck from flint or steel, a very inconvenient method. It is hard to say how many millions of matches are made in a day, but when the number of people that use them is reckoned the total sum is appalling. Probably in the city of New York alone over 20,000,000 matches are used every 24 hours. But matches are such little things that nobody ever seems to think of them. From an ordinary three-inch plank 186,000 matches may be made, yet even at that rate the lumber used in the match business attains enormous proportions.

Pins are mentioned as far back as 1483, but not until the beginning of this century were they manufactured by machinery. The old way of making each pin by hand must have been very tedious, and it is not likely that people were so careless with them then, as they were much more expensive than now. It has often been wondered what becomes of the pins that are lost, but it is hard to say. There are 14 distinct operations in making a pin, and lots of trouble attached to the process. Pins are made of brass, and then tinned and blancheted, and millions of them are manufactured daily. As a pin can be used more than once, the number used does not equal that of matches, but still miles upon miles of wire are used annually in their manufacture. Like matches, they are little things and not thought much of; but when you need a pin or a match, and there is none to be found, then you realize what an important part they play in daily life.—*Harper's Young People*.

Over 40,000,000 of Queen Victoria's subjects in India, so it is stated, never know what it is to get enough to eat.

BY THE WAY.

A Homely Love Idyl of the Vaterland.

BY ADELE M. GARRIGUES.



THERE WERE four of us women, two young and two who were not yet old. We had a long time to wait for the little steamer that was to take us to our Summer cottage on the lakeside. The country station was the typical one, and with lunch baskets in hand we resolved to escape from it. Down the length of the one street of the little town toward a group of fine elms in the corner of a green field we went. When comfortably seated in the shade Gertrude and Lucy demanded entertainment, and there was a persistence and unanimity in their pleas that made us suspect some wayside collusion.

"There are two *Seasides* in my bag," I said.

"We must save the literature for future need," Gertrude answered. "It would be reckless waste to use it now,

when we can have romance from real life.

"Yes, indeed," Lucy interposed. "If truth is stranger than fiction let us see that it is so. Here is Aunt Gretchen looking as placid as a Summer morning. Now, if there was ever a ripple in the stream of your existence, take us back to it."

And Gertrude added, "Yes, take us back, let us see if the present tranquility is that of stagnation or the stillness of deep waters."

There was a flush on the fair placid face, and a certain humidity about the fine eyes that promised well, but the sweet, serene woman turned to me and said:

"Mrs. Bowman, do please tell us the story of your courtship."

"Certainly. John and I had known and loved each other from childhood, and when he was able to marry, and I was old enough, we were married, and have been as happy ever since as people with seven children, and the usual proportions of whooping cough and measles, can hope to be."

"Now, Aunt Gretchen," said Gertrude, "I hope you will give mamma the rebuke she needs. I'm sure you will help us to rebel against such lame and impotent conclusions. If romance is indeed dead and buried, at least call back its ghost for one brief hour, or we shall think that women of your generation are faithless to their privileges."

Margaret Williams, or Gretchen, as the girls were fond of calling her, was of German parentage, and though born in America she used many German idioms, and had something of the ingeniousness of manner that distinguishes German from American women. I remembered very well the brave struggle she had made for her right to marry the man whom she loved, and I was as curious to hear the story as the girls could have been. Seeing her evident hesitation, I tried to give it a prosaic introduction by some allusion to her pale face on the occasion of our first meeting. She was at that time teacher of music in Madame Bohne's school, and had won the affection of my little daughter, and later on my own, by her sweet sincerity and thoughtful kindness.

"Yes," she said, after a short silence, "I was unhappy then. Mamma wished to make a fine marriage for me, but Herman had told me that he loved me, and my heart would not let me obey her."

This seemed a good beginning. The two girls, after a mutual glance which meant that possibly we might yet be entitled to respect on romantic grounds, settled down to silent attention.

"Poor mamma," Margaret resumed. "It was not so," she said, "in the old country. She thought it was unmaidenly for me to love Herman without the consent of my parents. She arranged for me to go to Madame B——s. Herr M—— was often there, but my Herman, never. We wrote letters. When the school year was ending the commencement ball came on, and for a short hour we met and were happy. I promised him that nothing should ever make me marry a man whom I did not love. And then we parted. Och Himmel! it was all so sad. Mamma was at her home by the lake that Summer, and that you know is just 12 miles from S——. And Herman was teaching music at S——.

"You know Prof. L——. Ah, he was our good friend. It was at his house that we had first met, and I think he loved us both. I went there for a few days before going home, but mamma sent for me. The days were long, indeed, that Summer, and some strange spirit was living within my mother's breast. She talked in the morning, she talked at noon and at night of my marriage with Herr M——, and when I was silent she reproached me, and at last she forbade me to write to Herman. It was hard to be good and obedient then, and when I was sad she said I was dishonoring my parents. Herman came to the little church where we worshipped in the Summer. I could only look at him, but he understood and believed in me. My mother told me that on the first day of another month Herr M——

would come for me, and that when I was once married and settled in the fine home that he would give me I should be very happy, and would thank her for all.

"My heart ached, and I could not feel as she did. I thought the good God would never let me say false words to one man while I loved another as I loved Herman. The days went by, and I wondered what I should do if Herr M—— should come. I wrote a letter to my good friends, Prof. and Mrs. L——. It must have told them that I was very unhappy; for, one morning very soon after, when I was out feeding my doves, their carriage drove up to our gate. My mother loved and honored them and gave them a warm greeting, as she did also the good Father B——, our pastor, who came with them. I could not tell them of my trouble, for mamma did not leave us, and when at evening they were preparing to go home, Prof. L—— turned to me and said:

"You see, Gretchen, we have a vacant seat for you in the carriage. Will your mamma let us have you for a week?"

"I could not speak; we all turned toward my mother. She looked from one face to another. I believe she thought we had some plan against her wishes, but we had not. Oh, how she talked! I did not know my mother, and I felt then that she did not know her child. She accused me of being untruthful, base. My face grew hot, and the sobs shook me so that I could not stand. At last, as she stopped to take breath, Father B—— said:

"Let us pray."

"We dropped to our knees—all but mamma. She stood there hard and unyielding. The prayer melted all hearts but hers. I wanted to do right. It was very hard to see the carriage drive away, and not to send one word of greeting to dear Herman. But I knew that they would see him, and I was sure that he would trust me.

"When they were gone mamma and I had a long talk. I promised to stay at home for a year if she would not speak the name either of Herman or Herr M——, and that when the year had ended, if I found that I could love him, I would marry the man she had chosen for me.

"Poor mamma, she was glad to have me at home on any terms, and she hoped that I would one day feel as she did. But she could not keep her promise. It was very hard to hear her upbraid my Herman as low and designing, when I knew him to be true and noble. She gave me no peace. I could not stay and hear her talk so of the man I loved. I told her that I should go away if she did not cease talking of Herman with disrespect. She looked at me with a great surprise in her face. I had not spoken so to her before. Then, again, she called me unmaidenly, and said I would go after a man who had not bravery enough to come for me. I looked at her and went away.

"That night! Ah, I cannot forget it. It was the last night of my girlhood in the dear little room that looked out upon the lake. I put my things in order, packed a small hand bag, and then sat by my window and thought. It seemed right to go away, for I could not be good at home. I looked up at the stars, as I always did at night, and wondered how I could look up to the great deep heavens if I should not be true. I looked out upon the lake and thought I would rather sleep under its deepest water than pledge myself falsely.

"I wrote mamma a little note and then went to sleep. When the birds, whose nest was very close to my window, began to sing I awoke and dressed myself to walk to S——. I put the note down at mamma's door and went out. It was hard to leave home in that way, but as I walked on my heart grew lighter, and I began to be very happy. The sun came up and made the world all beautiful. The dear birds were singing of love. Herman was waiting for me, and I was going to him. A long walk, do you say? It did not seem so, then, though long before I reached S—— the sky darkened and the rain fell.

"I rang the bell at Prof. L——s house. The servant who opened the door spoke my name with such surprise that Prof. L—— came out of his study at the head of the staircase and stood awaiting me. He put his two hands so tenderly on my shoulders and said:

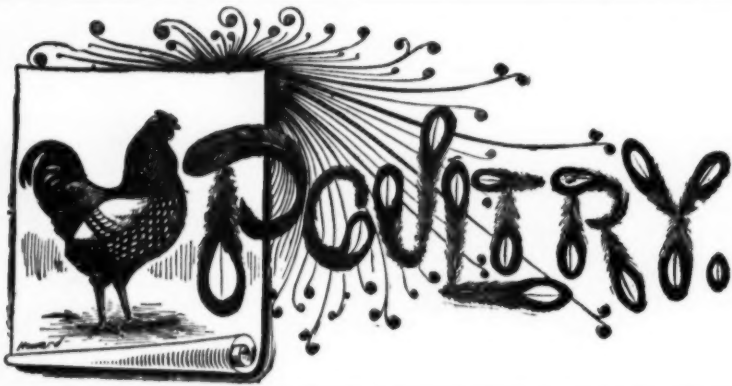
"We're glad to see you, Gretchen. Go right in there and let Mrs. L—— give you some dry clothes and put you to bed."

"And she did put me to bed, though I told her that I was neither tired nor sick, but very hungry. Prof. L—— had to go down street on business. He said afterward that he felt sure he would meet Herman, though he did not at all know where he was. He did meet him. They stopped, and each looked at the other. Prof. L—— said, 'Gretchen is at our house.' He says he had much more to say, but Herman did not wait to hear it. The dear, impatient fellow!

"We took counsel with our friends and with our own hearts. We felt that time would only strengthen mamma's objections, and we decided to be married. Madame B—— bought my piano, and one month was enough in which to make my simple preparations. I wrote to mamma begging her to come to the little church wedding. She has forgiven me now, but she had not then. Prof. L—— and his wife, with two or three other good friends, walked with us up to the chancel of our church after evening service. Father B—— married us and gave us his blessing. Yes, the little one is named after mamma, and no one could love her more dearly. And Herman? Yes, mamma loves him too, I think; at least, she ought to, for he's good and true."

"Thank you, Aunt Gretchen," said Lucy. "I knew you would tell us a story. I hope somebody will object when I want to marry. It will be so stupid to have everything go on in the stereotyped conventional way. There, our steamer is coming; we have just time to reach the dock."

"And I," said Gretchen, "shall sleep in the little bedroom of my girlhood days to-night."



Cacklings.

One evil result of over-feeding during the Summer is bowel disease.

A Toulouse gander crossed with a Embden goose gives a good marketable product.

No person who has poultry should permit his fowls to be without green food at this season of the year.

Because sour food or injured grain can be bought cheaply it is no reason why it should be fed to the poultry.

It is a well-known fact that unfertilized eggs, that is, eggs laid by hens not kept with roosters, will keep longer than fertilized ones.

The Muscovy duck seems to be the favorite in the South. Their popularity is due to the fact that they are better suited to warm climates.

Those poultry raisers who live near a city can sell the poultry droppings generally to florists. We have in mind several poultrymen who do this.

It is a great mistake to crowd too many chickens in one coop when shipping. The evil effect is obvious. Farmers should be careful and not overcrowd a coop.

This warm weather rapidly decomposes matter. Things which have been thrown to the poultry should be cleared up before decomposition sets in. This is an easy way to keep disease at bay.

Dr. Louis Prevot, a French scientist, is studying the language of chickens. He has been at this work for some time. The results of his investigations will be given before the French Academy of Sciences.

Massachusetts has passed a law in which it was enacted that any person who suffers his fowls to enter on, pass over, or remain upon the land of another, after being forbidden so to do in writing, shall be guilty of a trespass, and liable to a fine of \$10. This is intended to do away with the shot-gun policy, which has been in vogue in dealing with stray hens all through New England for the last 50 years.

It is useless for a beginner to try and experiment with hens. There is no business which is more injured by constant changing, trying to find something better, and discarding the old before anything better is obtained than the poultry business. All breeds of fowls have some good points, and the ideal one, satisfactory in everything, has not been discovered, and this is not the worst of it. There is very little chance of a fowl being discovered which will be an excellent layer and reach a good weight for table use.

Poultry Pays.

EDITOR AMERICAN FARMER: A year or two ago a lady friend of ours, who was keeping poultry in a small way, kept an accurate and regular account of her work for one year, and kindly gave us the figures, which were published at the time, and a friendly challenge was made to equal or excel the showing then made. As we have never heard from said challenge, we presume it has never been duplicated.

Below see the figures. She began the year May 1 with 100 hens. During the ensuing year, from these 100 hens, she sold as follows:

Eggs, to the value of	\$365 68
Chickens	60 00
Value of the droppings	25 00
Add value 50 extra hens on hand at end of the year	20 00
150 chickens on hand	15 00
Total income for one year from 100 hens	\$385 68
Less feed bill	80 95
Net income	\$304 73

The lady started in with just 100 hens. At the end of the year she had the original 100 hens on hand, besides 50 young pullets, raised during the year, and 150 chickens unsold, which latter she values at the very low price of 10 cents each. In this work she did not count her labor nor the refuse from the table, which was fed to her flock. She only counted the grain that was fed out.

This shows an income of a little more than \$3 net from each hen. The same lady is at work again this year and keeping a record, which at the close of the year will be published. The object of these figures is to show that poultry will pay, provided it is well handled.

We know of no section of country where it will pay better than in the section of country around Norfolk, Va., a district that is bounded on the east by the Atlantic Ocean, on the north by the Chesapeake Bay, and on the west by Hampton Roads and James River, and that is penetrated in every direction by salt arms of the sea in which the tide constantly ebbs and flows. These streams afford fine opportunities for raising ducks and geese, and the close proximity to the great Northern markets, in connection with the great demand here for poultry products, insures success to the thorough-going poultry worker.

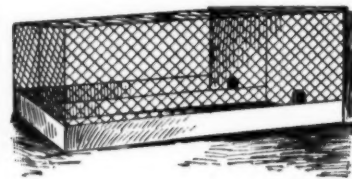
We invite careful comparison of the above figures, with the results attained by any other poultry keepers, and believe we can supply poultry people with a treat when the next statement is ready for the public. We shall send in the figures, together with the lady's name, and challenge the country to "go and do likewise," if they can.—A. JEFFERS, Norfolk, Va.

A Run for Chicks.

EDITOR AMERICAN FARMER: I have raised quite a number of chickens this season and have had excellent luck, especially with my Brown Leghorns. I had over 100 Brown Leghorn eggs under hens this season—three hens had 17 eggs each; three more had 15, and one had 13. Out of this I have succeeded in raising 95 chickens. A good many of your readers may consider this to be an extraordinary success, but I do not think that there is anything extraordinary in it. Anyone can be as successful as I have been if they will only take care of the chicks after they have been hatched.

But I do not intend to tell you anything about how I raised my chicks; I want to tell you something else. I have quite a large number of hens, and they have yards to themselves. I have not so much room, and confine the poultry in a section of my place. When my first hatch of chicks came out this year I pondered and pondered as to what place I could assign them. I knew that I could not let them run together, for so sure as I did just so sure would the mothers get quarreling among themselves, and the result would be the trampling to death of a number of chicks. I have had experience in this, and know of what I am talking.

I know what the result would be if I put the chicks in the yards with the old hens. I put my thinking cap on and devised a scheme which would solve the problem. I made a little pen, like the inclosed sketch, built a board house for the mother and chicks to stay in at nighttime, and then made a run for both the old hen and her chicks. In two cases I made the house section of these runs out of old boxes, which served their purpose admirably. I put two runs in each yard, and I have had no trouble whatever with the chicks.



THE RUNS.

The sketch which I send will explain itself, I think, but there are some things which I fear will not be understood without an explanation. The house opens in the run and the aperture is large enough for the mother hen to pass through. The whole back of the house is on hinges, and can be opened to clean it out. The houses that I built, taking the two together, were of the following dimensions: Height, 18 inches; width, 12 inches, and length, 36 inches. The run is five feet long by 18 inches wide for each brood, and at the base, extending all around, is a six-inch board to keep the little chicks from hopping out. Above this base-board is two-inch wire netting, which I bought at 60 cents per 100 square feet. By this scheme I separate the mother hens, have the chicks to themselves, where there is no danger of their being killed by the laying hens, the liability of disease is lessened, because everything

can be kept clean easily, and the chicks can get plenty to eat and drink whenever wanted.

Before I close I would like to ask if any of the farmer's wives and daughters have ever fed cucumber, squash, and eggplant peelings to their poultry? I have tried it, and the peelings are eaten readily.—MRS. MARY HAYWARD.

Winter Laying Breeds.

Farmers have been too often advised to do away with dunghills and get stock which lays better, especially in the Winter time. Like everything else that they did not like, the advice went into one ear and came out the other. It is worth while if they let some of this advice remain in their head, for a short time at least, before it goes out the other ear. A chicken of a good breed will lay more eggs in a year than a dunghill. This fact cannot be disputed. After these stock chickens have been killed they can be marketed better and quicker, because their flesh is far better for the table than that of the dunghill.

A series of experiments have been tried by the Agricultural Department of Canada, and the result has been published in full. We will, however, only make an extract of what the report says.

In speaking of breeds the report gives exactly what has been advocated over and over again:

The farmer will not make a mistake by choosing his Winter layers from the Leghorns, Plymouth Rocks, or Wyandottes. The Wyandottes, perhaps, come as near filling the bill as possible, having little or no comb, and being good layers. It is often said, however, by the inexperienced or prejudiced, that fowls with large combs are not satisfactory Winter layers, because their combs will freeze. If anyone wishes to make a revenue from Winter eggs he must not keep layers where combs will freeze.

As regards growth of chickens, the Plymouth Rocks and Wyandottes make the most rapid headway. The Buff Cochins apparently made the best showing, but it was on account of the large, bony form. The Plymouth Rocks and Wyandottes produced the most actual flesh.

The age at which the breeds begin to lay is shown by this paragraph:

A White Leghorn pullet hatched on May 9 was the first of the young stock to lay, laying the first egg on Oct. 29. A Wyandotte hatched May 8 laid the first egg Dec. 5. A Plymouth Rock hatched May 12 laid her first egg on Dec. 7.

It is well to remember the conclusions which were reached:

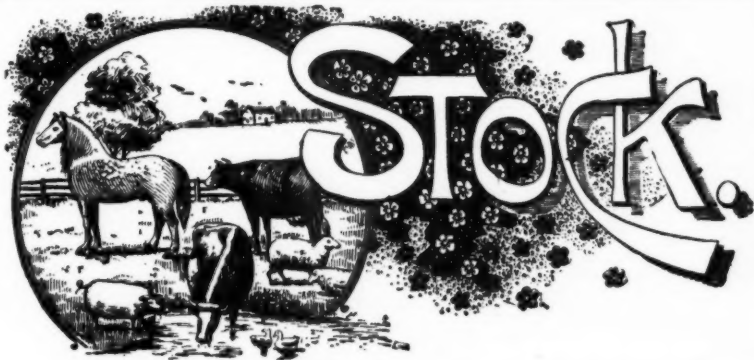
Do not inbreed.

Keep no hen over two years; the old ones eat the profit made by the younger. Convert the waste of the farm into eggs and poultry.

Too many early chickens cannot be raised. They represent so much ready money.

Make hens lay when eggs are highest in price and not when lowest, as is the practice now.

Germans constitute over 55 per cent. of the population of the State of Indiana.



Stable Talk.

The best feed for calves in Winter time is clover hay.

Roger Hanson (2284), the sire of Jessie Hanson, is blind.

The stallion owners complain that this is the worst season they have had for 20 years past.

One hundred pounds of wheat bran is worth as much for feeding as three bushels of oats.

Rheumatism in horses may be traced quite often to exposing them to drafts of cold air in the stable.

It is very poor economy to turn stock into a field of cornstalks, besides the danger of loss by impaction.

Good, well-cured hay is just as important for the economical Wintering of stock as plenty of grass is in Summering.

Stock cattle can be brought through the Winter in good condition on good timothy and clover hay and corn fodder with very little grain.

Give the young calves the run of the clover patch. It will not take them long to learn to feed, and they will be greatly benefited by it.

Cornmeal is not a good feed to give to calves. Like whole corn, it is too heating. A little may be scalded and used with the grain food.

Ontario (Can.) breeders of thoroughbred animals have already applied for space for 163 horses, 193 cattle, 278 sheep, and 91 swine at the World's Fair.

While whole ears of corn may be well enough for the horses, yet it is not good for the cattle. Give the cattle corn and cob meal, and they will get along splendidly.

It is best not to feed flint corn on the cob to horses. It is so hard that it will hurt the animal's lampers and make them sore. The safest way would be to grind all corn of this kind.

Senator Stanford has recently lost several valuable horses at Palo Alto from distemper. The disease seems to prevail in a highly virulent form. Palo Alto, 2,083, is the most valuable animal lost.

In the Fall of the year the mare is not compelled to work as hard as in the Spring, and she is better enabled to suckle the colt. The colt in return is benefited by an abundant supply of milk.

Great care must be used in feeding calves by hand. The feed should be as warm as new milk, and too much not given at the same time; but, like young chickens, they should be fed four or five times a day.

The importance of plenty of good grass in raising and feeding stock cannot be overestimated. Every stockman knows the importance of plenty of grass for all kinds of stock during the Summer months.

All the straw raised on the farm can be used to good advantage in feeding stock. Good, bright oat straw is of equal value to prairie hay. The wheat straw can be used to good advantage as bedding. If it is cut at the proper time it will be eaten very well.

It is a great disadvantage to have a mare in foal in the Spring season of the year. At that time of the year all the horses on the farm are needed, and the farmer cannot well afford to spare even one horse. This gives some encouragement to those who advocate the raising of Autumn colts.

The Hamlin pair of trotters, Belle Hamlin and Globe, trotted a mile in 2.13 over the regulation course at Detroit recently. The first half was made in 1.07½ and the last in 1.05½, with the last quarter in 32¾ seconds. This is the fastest mile ever made by a pair over a regulation track.

Some agriculturists assert that it is a waste to have the horse's manger always full of hay, and that it is best to give the animal only as much as he will eat up clean at each feeding time. We do not think that it is wise to follow this plan. Let the manger be always full, but see that the horse does not waste any hay. Oftentimes the horse nibbles at the hay long after his feeding time, and there is no sense in depriving him of what he wants.

If the stock is troubled with lice, a good and efficient remedy, which is death to the lice and does not injure the hair of the animals at all, is made as follows: Take two quarts of boiling water and add a quarter of a pound of strong hard soap, and then add one pint of kerosene. This is a very simple mixture, and after the ingredients are all in the mixture should be so shaken that it becomes creamy. If this is done well there will be no kerosene rising to the surface after the matter has settled. This mixture is quite strong, and before using it should be diluted by adding three parts of water to one part of the mixture.

The American Draft Horse.

The interest which is being taken in the American draft horse is increasing, and there is no reason why it should not continue to increase. All over the country draft-horse associations are being formed, many State draft-horse breeders' associations have been already organized, and the American Draft-Horse Breeders' Association is doing excellent work toward bringing this class of horses before the eyes of the public.

The American draft horse represents the work of 30 years' crossing. The strength, symmetry, action, and endurance of the horse is the result of the cross of thoroughbred Kentucky mares and imported stallions. The animal is near 16 hands, has a kind disposition, possesses great endurance, has a remarkable amount of intelligence, and never flinches. A horse of this height will weigh in the neighborhood of 1,600 pounds.

While farmers are breeding for draft horses they will find it cheaper in the long run to have good draft horses in the place of scrubs.

The cheap-service mania has induced some farmers to breed to a scrub. The result of this depends altogether upon the dam. If the mare is a good grade she has good blood enough to produce a tolerably fair colt. This fact seems to confirm their opinion that a scrub sire will produce a good enough colt. They stick to this idea and continue to breed and inbreed until the stock has run down.

Would it not be better to secure a good draft sire—and for farm work the American draft horse is unequalled—and breed from him, thereby improving the stock each year, instead of decreasing it?

English farmers breed from nothing but the best of draft sires and dams, and as a consequence their farm stock is superior to the average stock on American farms. Why do not American farmers do as English farmers do? Certainly they can, and there is no reason why they should not.

A Wash for the Legs of a Horse.

A correspondent asked for a recipe to be used on the muscles and legs of a horse. He was desirous of having something which was not so expensive as witchhazel. The American Horse-breeder answered the inquiry as follows: The chief value of witchhazel is probably due to the alcohol it contains, although it has in addition some astringent properties. In former years New England rum was used extensively on the tracks, but it was always a question whether the horses or the boys derived the most benefit from it. This doubt led to the use of a mixture of rum and tincture of arnica in equal parts, the arnica not only being a useful liniment, but also rendering the liquor unsafe as a beverage. Within the last few years fluid extract of witchhazel has come into pretty general use, and is not very expensive if bought by the quantity. A wholesale druggist ought to be willing to supply it at \$1 to \$1.25 per gallon. Some large trainers use so much that they buy it by the barrel. If it cannot be procured cheaply, alcohol and water in equal parts, rum, whisky, or anything of the kind may be substituted.

Pig Pens.

EDITOR AMERICAN FARMER: I remember reading in one of the reports of the Agricultural Department that the principal cause of the great mortality among hogs is due to unclean quarters. I have been raising hogs for a number of years, and have always been successful. This I attributed to the care which I took and the manner in which I fed them. I do not give them food just because I want to get rid of it, but I give them food which will lay on flesh, even though it may cost a little more than other food.

But I am digressing. I did not believe what the agricultural report said. I have good pens for my hogs, do not let them wallow in filth, and keep the place clean. My *modus operandi* is followed by the farmers surrounding me, and for that reason I thought that the report had made a mistake.

My views have now, however, undergone a complete change. I was obliged to take a trip as far North as Maryland. On the way I had a chance to see in what manner the pigs were cared for, and I must confess that I was disappointed. Not three out of 40 places had decent pens, and the remaining 37 were in all stages of construction. Some were lean-tos, through which the wind had a clear passage. The majority were roughly constructed of logs and afforded no protection whatever. After seeing this I did not wonder at the mortality among pigs, and another wonder to me is that the mortality is not greater.

Anyone who desires to make a profit out of hogs should primarily see that they are well housed. What good will excellent feed do the hogs if they suffer from want of comfort? As the season is here when the farmer will have spare time on his hands, I would advise all to erect decent pens for the pigs.—E. C. G., Irwin County, Ga.

Pen Notes.

Good returns are made when the skim milk is given to the young pigs.

It is useless to try to keep pigs strong and healthy without plenty of proper food.

Clover and corn cut in the milk fed to young pigs is an excellent thing to promote growth.

There is no profit in pigs that receive no attention. To make them pay they should receive some care and be fed in the most economical way.

Nothing delights a pig or benefits him more than a feed of roots. It is worth while to give them a ration of potatoes, beets, turnips, or artichokes at least once a week, or as often as possible.

The brood sow should be given plenty of food; in fact, she requires about twice as much as an ordinary pig. If she does not have enough food to keep herself and farrow in good condition the owner will be disappointed when the little pigs are full grown.

A story is being told of a Georgia man who bought a pig while on a trip to town and took it home with him. The pig, however, did not seem to like its new quarters and immediately began to walk back to its former pen. On its return trip the animal was compelled to "swim half a mile across a pond in its journey."

THE AMERICAN FARMER.

"O fortunatos nimium sua est bona norint agricolas."—VIRG.

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MOVING THE CROPS.

We are now approaching a season to which all business men look forward every year with more or less anxiety. The second week in September is the one which will bring a panic, if any is to occur during the year. The reason for this is easy to explain. New York City is the financial heart of this country, just as Paris is of France, Berlin of Germany, and London of the world. Twice a year substantially all the money in the country flows into New York, and twice a year it ebbs out again. The middle of February every year usually sees a large proportion of the circulating medium of the country heaped up in the banks of New York. It has been sent in from all parts by merchants to pay for goods which they have bought the previous Fall, by railroads to pay dividends, and by manufactories to meet their indebtedness for supplies. It lies there for some weeks, is offered at low rates of interest to speculators and to operators in stocks and schemes. As Spring advances navigation opens, the remainder of the previous year's crops seek a market, tens of millions of dollars are required to pay the farmers and warehousemen for them, tens of millions more are required for new enterprises and the carrying out of old ones throughout the country. The great reservoir of circulating medium is tapped on all sides, and by the middle of May it is drained to its lowest point. The banks call in their loans from the Wall street operators, for they have more profitable use for their money, and in times past the pressure has produced a panic.

The money begins to flow back almost immediately. The country merchants begin to pay for their purchases of Spring goods made the previous Winter, the railroads and other corporations meet their semi-annual dividends, and

the great manufactories pay for their supplies. By the middle of August the greater part of the money is again heaped up in the banks of New York. Then comes another and still severer strain. The new crops of grain, meat, sugar, cotton, rice, etc., begin to seek the markets, and hundreds of millions of dollars are needed to pay for them. It is then that most of our panics have originated.

It is this which has given serious thought to the financiers of the country, and those in position to do so have been busied with preparations to ease the inevitable strain as much as possible. It is confidently believed that these preparations will lead to a successful result. The condition of the country is very prosperous; the crops are abundant, and prices are fair; the banks of Chicago and New York have quietly called in and circumscribed their temporary loans, and are unusually well-supplied with money. The Secretary of the Treasury has done what is possible to provide for any emergency, and now announces his confident belief that there will be none, but that everything will move along smoothly and prosperously.

WHEAT PROSPECTS.

Taking the world over this has been a poor year for wheat, though somewhat better as a whole than last year. Russia will have a fraction of a crop only, but what sized fraction it is hard to say, as crop statistics is far from being an exact science in Russia, and the officials differ very widely in their estimates. Next to Russia India is the worst off, and falls about 60,000,000 bushels short of the average crop. South America and Australasia will have something less than an average crop, while Great Britain will be short from 8,000,000 to 10,000,000 bushels, and in Denmark, Norway, and Sweden there will be an almost total failure of the cereals. The crops in such minor countries as Spain, Portugal, Hungary, Italy, Bulgaria, Greece, Asia Minor, northern Africa, etc., will be from 10 to 15 per cent. under those of 1891. France and Belgium alone of European countries—if we except Russia—show an increased yield, which, it is estimated, may be enough to make up the shortage in Great Britain and Italy, leaving the rest to be supplied from the United States.

This brings us to the consideration of our own crop. The conditions have not been so favorable here, either for Spring or Winter wheat, as they were the previous year. In the interior of the country—that is, west of the Alleghenies—the wheat sown last Fall had a severe struggle against adverse weather, and the Spring opened with it looking somewhat sickly, but it improved a good

deal in May, only to be thrown back again in the following weeks. Spring wheat suffered in the same way, and the most reliable estimates place our crop at 480,000,000 bushels, or 132,000,000 bushels less than last Fall. As we shall need 8,000,000 bushels more for domestic consumption than last year, this will leave probably 140,000,000 bushels for export. It is clear that wheat is not going to be a drug in the market for the next 12 months, but will be held firmly, with a tendency to advance prices.

NUMBERING FARMHOUSES.

The introduction of the Rural Free Mail Delivery System has given a renewed interest to the old idea of numbering farmhouses so as to facilitate finding them, by strangers, and making more certain that the dwellers in them shall receive their letters and papers. A number of schemes have been suggested, and quite a complicated one, known as the "Contra Costa block system," is being put into operation in some parts of California.

To our mind a much simpler and better plan would be a modification of the Washington City system of naming streets and numbering houses. Washington is divided by two lines passing north and south and east and west through the center of the Capitol. All the streets running parallel with the east and west lines are lettered, the alphabet being run in each direction. That is, the first street north of the line is called "A street north," the second "B street north," and so on. On the other side of the line the first street is "A street south," the second "B street south," and so on. The streets that cross these at right angles and run parallel to the north and south line are numbered the same way, beginning at the line and running east and west. Thus, the first street west of North and South Capitol streets is "First street west," the second, "Second street west," etc. East of North and South Capitol streets is "First street east," "Second street east," etc. Generally, however, the city is considered as divided into four quarters by the streets representing the intersection of the Capitol; that is, into "Northeast," "Southeast," "Northwest," and "Southwest." To each block is assigned 100 numbers, and this is a great convenience in finding any address wanted. For example, if an address is given as "610 Q street northwest," it is at once known that it is just a few doors west of Sixth street on Q north, and west of the Capitol, and one can go directly thither.

In the prairie Counties of the newer States this system could be adopted almost in its entirety with advantage. There the land has been laid off with

the regularity of a checker-board, with roads on all four sides of each section. The courthouse might be taken to represent the Capitol, and lines drawn east and west and north and south through its center divide the County into four quarters—northeast, southeast, southwest, and northwest quarters. Roads running north and south through the County could be numbered east and west from the courthouse, and those running east and west could be either lettered or named after the Presidents, the books in the Bible, the States, or something else that would give regular succession. Then 100 numbers could be allowed to each mile from the courthouse, with the odd numbers on the north or east sides of the roads, and the even numbers on the west and south sides. Then, if a farmhouse was set down as "No. 307 Jackson Road northwest," it would be at once known that it was at a point about three miles west of the courthouse, and seven miles north, and on the north side of the road. Roads that ran irregularly across the blocks inclosed between the right-angled roads would take the numbers belonging to the blocks. For example, New York avenue, on which is the office of THE AMERICAN FARMER, runs diagonally at that point, from the northeast to the southwest. The address of THE AMERICAN FARMER is "1729 New York avenue N. W." That means to anyone familiar with Washington streets that it is on the north side of New York avenue, between 17th and 18th streets.

With a little ingenuity this system, which is the admiration of all visitors to the National Capital, could be adapted to any County, using the courthouse or the city hall of the principal city as the basis for the system of numbering and naming the roads, and numbering the houses, so that they could be found without any trouble.

FLORIDA promises to become a sharp competitor of Cuba in the fine grade of tobaccos of which that island has heretofore had a monopoly. Several plantations in that State produce successfully brands that have heretofore been only obtainable in Cuba. This is in the right direction. Let us have every agricultural product possible produced under our own flag, and the money put in the pockets of our own farmers.

THE movement for good roads has come to stay. It is not a rebellion but a revolution. The people have endured the grinding, robbing tyranny of wretched highways with remarkable meekness, but now they are at last roused to insurrection, and it is an insurrection that cannot be suppressed.

"RAIN-MAKING" FRAUDS.

The well-intentioned efforts of the Government to test the theory of making rain by bombarding the clouds with high explosives have had the baleful effect of letting loose upon the farmers of the West a gang of sharps who contract to produce rain for so much per acre or mile.

This is swindling—pure and simple. These sharps are merely working the farmers for their money. They have not any scientific knowledge of the subject, and cannot do what they claim. They wait until they get information that a rainfall is likely to occur, then make a great banging with giant powder, rackarock, or some other noisy explosive, and if the rain comes they claim to have produced it, gather in the farmer's shekels and skip out to find another gullible community.

The experiments conducted by the Government were accompanied by every device that skill could suggest to insure a successful result. Many things were done which would not be possible to private parties. Yet the universal opinion among scientific men is that the experiments were a failure, and that they showed that rain could not be induced by such means. The most, it is believed, that can be done is that when the clouds are almost ready to drop rain the matter can be precipitated by loud explosions which will disturb the air. Unless, however, all the conditions are extremely favorable for rain and it is liable to fall at any moment, bombarding the skies is merely throwing away money, and it is probably so at any time.

It is proposed to introduce the kangaroo into this country as a profitable stock to raise. They have been bred successfully as far north as Scotland, and it is thought they would do well on the cold, infertile mountain ranges of the Far West, where it is not profitable to raise cattle. They are easily domesticated, easily grazed and fed, breed rapidly, and are quiet, gentle stock. Their flesh is very fine, and they have a great deal of it, they produce a quantity of valuable fur, and their skins make a leather which is every year coming more into demand. They can be kept in an inclosure surrounded by wire fence six feet high.

WHILE we shall not have nearly as much corn as last year, we shall still have an immense crop. While western and southern Kansas fields have succumbed to the drouth and heat, those in the eastern portion of the State are in excellent condition, especially in case a good rain comes opportunely. On the other hand, Illinois already smiles broadly over the certainty of an im-

mense yield. In other parts of the country the reports are from fair to good. We will have many hundreds of millions of bushels of corn, but this country needs many hundreds of millions of bushels, and the prospects are that there will be a continuous though gradual advance in the price of corn.

THE British fruit growers are trying to get together and secure better prices for their products. They find that, though the consumption of fruit in the islands has increased enormously and \$22,500,000 is annually paid out for foreign fruits, they are not making the money they should. It is suggested that a co-operative fruit-growers' association be organized to look out for their interests, and that one of the duties of this shall be to arrange with the great jam and preserve factories to relieve any glut of fruit in the market by taking the surplus at a fair price.

In the Mediterranean countries the chestnut forms quite an item of food. The large chestnut, a native of Italy, which somewhat resembles what we call the horse chestnut, is used quite extensively as food. Chestnut bread has become an established feature in France. In Spain it is nothing for a Spaniard to make a full meal from chestnuts alone, and large quantities of the nut are gathered, cured, and stored for the winter. The efforts to make chestnut coffee have resulted disastrously, and the idea has been abandoned. In some countries chestnuts are used for trade purposes. From 100 pounds of chestnuts two gallons of pure alcohol may be produced.

ATTENTION, SHEEP RAISERS!

The Wool Exhibit at the World's Columbian Exposition in 1893—Judge William Lawrence, of Ohio, Appeals to American Wool Growers to be Fully Represented at the Exposition.

EDITOR AMERICAN FARMER: It may interest some of your readers to know that the Ohio State Agricultural Fair and Industrial Exposition will take place at the State Fair Grounds, Columbus, from Sept. 12 to 16, inclusive.

On Wednesday, Sept. 14, at 10 a. m., the Ohio Wool-Growers' Association, the several Ohio Sheep-Breeders' Associations, many wool dealers, and others interested in the wool industry, will meet representatives of the Chicago Columbian Exposition for consultation as to the Ohio wool exhibit to be there made. On the same day I will deliver my semi-annual address to the Ohio Wool-Growers' Association.

Hon. L. N. Bonham, Secretary of the Ohio State Board of Agriculture, is Chairman of the Ohio Agricultural Committee for the Chicago Exposition.

The Superintendent of the Wool Department for the Ohio exhibit desires to secure from each County from 10 to 20 fleeces "just as they come from the sheep's back," so as to show "how the wool runs, not only in the

choice parts, but in the bellies, backs," etc. The fleeces are not to be skirted, and the ribs are not to be taken off.

In addition to this, the Superintendent desires to secure from 10 to 20 "pound samples" of fleeces from each County. The efforts to secure these fleeces and samples from the clip of 1892, except as to a few Counties, has failed, and in view of this the Chief of the Wool Department has authorized Mr. Bonham to secure fleeces and samples of the clip of 1893, provided they can be forwarded to Chicago by the middle of April of that year. This will require wool growers to shear the first week in April and immediately forward their fleeces and samples to Mr. Bonham, at Columbus, who will pay a fair price for all. Wool growers can correspond with him for instructions. Each fleece and sample must be accompanied with a statement of the wool grower giving the kind of sheep, age, sex, how kept, the date of shearing, and of the previous year's shearing. I earnestly urge Ohio wool growers—and indeed all wool growers—to give this subject attention; to feed their sheep so that the fleeces and samples will have no hay, straw, or other foreign matter in any of them, and that the exhibit may represent the highest progress in producing wool. If the exhibit from foreign countries shall surpass that made by wool growers in the United States it will be damaging to the reputation of American citizens for enterprise, and will induce manufacturers and wool buyers to buy foreign wools rather than our own.

There can be no doubt of the superiority of American wools over those of any other country. The report of the Chief of the Bureau of Statistics in the Treasury Department on wool and manufacturing of wool for 1887, says:

It is the current popular opinion that English and Australian wool surpasses American in quality, but the reverse is true. The American cloths are more durable than English. In all goods where soft and fleecy finish is required, American wool and American manufacturers excel those of the rest of the world. In 1851, at the World's Exhibition in London, four prize medals were awarded to American sheep, and at the International Exhibition of 1863, at Hamburg, where all of the finest fleeces of Europe were represented, two first-class prizes were awarded to merino sheep from Vermont. Since the year 1850, the Western States and Territories have taken the front rank as sheep and wool producing sections.

The American Consul at Sydney, New South Wales—G. W. Griffin—in his report to the Department of State, March 23, 1891, says:

The samples of American wools, and especially those grown in the State of Ohio, sent to the Melbourne International Exposition, were admitted by experts to be far superior to anything of the kind ever grown in these Colonies.—Consular Reports No. 128, May, 1891, p. 112.

It remains with the wool growers of the United States to give this subject proper attention, and see to it that our American wools on exhibition at the Columbian Exposition at Chicago in 1893 shall surpass in quality and value all the wools of the outside world.—WILLIAM LAWRENCE, President of the Ohio Wool-Growers' Association.

COMPLIMENTS.**"It Speaks for Itself."**

EDITOR AMERICAN FARMER: I need not comment on your paper, as it certainly does speak for itself to every intelligent reader. It is, in my estimation, the best agricultural paper I ever saw or read, and that is saying much, for I have read many, both in the German and English language.—REV. STEPHEN ROESE, Maiden Rock, Wis.

A Good Paper.

I have looked over THE AMERICAN FARMER, and think you have a good paper.—PROF. ROBERT HAY, Box 562, Junction City, Kan.

Much Pleased With It.

I received a copy of your paper and am much pleased with it.—W. C. McFERRIN, Deerfield, Kan.

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Romance of a Hammock.

Amongst the sunny apple trees,
And 'mid a scent of haying,
In dainty muslin draperies
A little maid was swaying;
The Summer sky peeped down, among
The leaves above her, as she swung;
And when she looked so sweet and young,
How could he keep from staying?

She was asleep, he fondly thought,
But, seeking to discover,
The pretty eyes looked up, and caught
Him fairly bent above her;
It may have been their fates' intent,
It may have been an accident:
But either brought the one event—
He straightway came to love her.

No stern duenna stood on guard,
No proper elder sister;
And so he found it quite too hard,
Unhindered, to resist her;
For when the languid Summer air
Brushed back the curl of golden hair
That touched her cheeks, she looked so fair
He stooped and softly kissed her!

You think that he was "very rude,"
And she was "bold and naughty?"
It may be you have misconstrued.
So, ere you look so haughty,
Please wait to hear the story told;
Perhaps you may not care to scold:
For she was only four years old,
And he was over forty!

—From Charles Burton Goring's "Summer Fallow."

By the Editor's Fireside.

HERE IS nothing truer than that a house is not always a home. You wonder perhaps what I mean by such a remark as this. Stop and think for a moment of the different houses into which you have frequent entrance. In some there is a sort of welcome in the very way the door opens to let you in. There is a peace and quiet in the atmosphere, a sort of "do as you please" expression of the furniture that renders it a very delightful place to stay. I do not mean by this that everything is as sixes and sevens; I do not mean that there is dust upon every article, that the chairs are all awry, and that everything is out of place. That is not necessary. It is only that comfort seems to have been studied by the homekeeper in all of the arrangements. Every article seems to be for use, not to be set away untouched, lest it be soiled or broken. Plenty of easy chairs are scattered around, comfortable lounges, broad and inviting, but not with such a nice cover that one feels as if it was saying, "Do not touch me." Whatever of bric-a-brac there is, is arranged so that there is no danger of its destruction or displacement. No one who enters there desires to seek any other place for rest and comfort. This is too inviting.

The house that is not a home may have everything in perfect order, but it is an order so rigid as to hold everybody in fear, lest he do something that will bring him into disgrace with the housekeeper, who may not be named also a "homekeeper." Everything seems to bear a "Let-me-alone" air that warns off approach. The sofa pillows are so gorgeous that one would not dare to lay the head thereon; fragile tidies or scarfs are fastened to the chairs, which may not be leaned upon or displaced; rugs must not be moved; the draperies may not be disarranged; books must be kept in the bookcase and never left upon the table; a newspaper lying loose, or a magazine, is not to be allowed. I would be willing to wager a great deal that I could describe to you correctly the mistresses of these two houses.

The one is a generous, kindly, hospitable soul, unselfish, and desiring to make those around her happy. She is not full of cautions to all of her family, nor does she feel utterly broken down if, by chance, any of her pretty things come to grief. The sunlight is welcome, even though it may change the color of some of the belongings, except during the heat of the Midsummer, when shade is so grateful. The other is constantly fretting because something goes wrong. Chairs are moved

out of place, and she feels the necessity of constantly putting them back into position, and this she is quite liable to do when guests are present, because of the habit formed with her family. She drives away the home-feeling by a constant insistence upon trifles. She orders the comings and goings, the sittings down, and the risings up of every individual member of her family, leaving them no liberty.

My friend, if you are a homekeeper, stop and consider to which of these classes you belong. It is not a matter of small importance, for it may be the making or the marring of the children in whom you take such pride and whom you so dearly love. If you make life a burden by your exactions in the way of following out your desires in every respect they will be very likely to find pleasures elsewhere than in the home. They will be sure to go where quick words and sour looks will not follow upon every little dereliction from the order of the day. It matters far less that your boy or your girl is late to a meal than that either the one or the other should be angered each time it happens by irritable or impatient words and looks. I do not mean by this that the homekeeper should not ask for a reasonable punctuality and a reasonable care for the belongings to the home; that is not only a right but a necessity. Carelessness often destroys what it has cost money and labor to obtain, and should not be allowed; but there is a moderation to be observed in all things, and a homekeeper has great need to learn by careful observation just where the line is to be drawn. There is a third homekeeper who sometimes will do quite as much harm as the rigid, ironclad rule woman. She may be full of fine sentiment and high impulses, and yet so critical as to demand too much of those by whom she is surrounded. Too frequently she will utter her reproofs in the presence of others, rousing anger and a disgust that will go far toward preventing a reformation, because it simply provokes the culprit without producing the slightest desire to do better. Such persons need to watch themselves carefully, lest by establishing too high a standard they sweep away the chance of its being reached by the younger members of the family.

Study to make the home in all its essentials a real home. The loving spirit that is full of a sweet self control, that will bear with trifles, and yet with wisdom enough not to allow a carelessness that degenerates into bad habits, is always sure to make the home attractive, whether it be a cottage, a farmhouse, or a mansion. Boys and girls who go out into the world from such a home as this always turn back to it with longing so long as life lasts, even though prosperity brings them the power of making homes for themselves of tenfold greater luxury and beauty. They will never forget mother, never find anyone who can take her place in their hearts during all the years, however full of variety and pleasure they may be.

* * *

LET NO one imagine, however, that the responsibility of making a house a home rests entirely upon the wife. Upon the husband and father comes quite as much of the duty, even though he is there so small a share of the time and his labor is in his place of business in the outside world. Too often he has small sense of what he should do to make his wife and children happy. He comes home with scowling brow, with a critical, carping spirit to find fault with everything and with each of the family. Feeling his importance as the breadwinner, he makes a petty tyrant of himself, holding everyone subservient to his will in the smallest as well as the greatest matters. Without being aware of what he is doing, he turns from him the hearts of his wife and children who dread his coming and delight in his going. He is only necessary so far as their physical wants are concerned.

Perhaps you who read are not conscious that you are this kind of man. It would be well for you to take note of little things. If you find your entrance greeted without pleasant words; if your children get up and leave the room when you are present; if your meals are eaten in silence; if you are conscious that your commands are frequently rebelled against, then it would be wisdom for you to look into your daily life. Something is surely wrong. I know of a family, the masculine head of which is a respectable business man without bad habits, and of ordinary intelligence. Unfortunately he has cultivated a natural egotism until it has become a mountain of conceit. No one in his estimation, certainly no member of his family, can possibly know as much as he, or even be capable of good judgment in the smallest matter when it is to be contrasted with his own. To wife and children alike he is overbearing and tyrannical without limit. He will not allow them to think for themselves in any way, or at least to act from any thought of their own, unless they do it without his knowledge. The natural consequence, is that they have absolutely no love for him, but instead a feeling of hatred and revenge sets in their hearts in a great tide toward him that could not fail to shock him if he had any love for them, and became aware of their sentiments toward himself. He does not see how he has driven them away by using his power so unconsciously and so unmercifully. The habit has grown upon him until it declares itself in his dealings with all who come into his life in any way that permits him

to show it forth. He has few friends, and while perhaps all who dislike him are not his enemies, they would be ready to become so if occasion offered.

No, the work of making the dwelling place of the family a home in the best and truest sense of the word rests equally, although in a different way, upon both man and woman. With united and harmonious effort they may make their dwelling place, whether cottage or palace, the nearest approach possible on earth to our conception of heaven.

* * *

Do you want a library? Yes, I think I hear you answer, but we have no money to buy books with, or at least not sufficient to make it worth while to even think of so great a thing as a library. Let me tell you, my friend, that it is by no means impossible for you, even though you are in very limited circumstances and can buy but a very few books yearly. Almost everybody can manage at least two or three volumes, if not more. Should you really make up your mind that you want to begin to form a collection of books that will be not only a source of entertainment but a means of education, then there are a few things which you will need to do. First you want to make up your mind what authors you desire to have a place upon your bookshelves. When you can only buy a single volume, get one of the works of these authors, taking care to purchase those from the same publishing house each time you buy. Presently you will have a complete set without realizing that you have made such an acquisition. Standard works are those that you should get always.

As soon as possible purchase a good encyclopedia. In these days they can be bought at a much less price than was possible a few years ago. The Encyclopedia Britannica stands first, because it has such a wide range of subjects which are so carefully and scientifically treated. This, however, may be utterly beyond your means; if so, then there is Appleton's, which is deserving of a place in any library. Then Chambers' Encyclopedia, which is cheaper than either, is yet most excellent, and for ordinary use will answer all purposes. Of course a Webster's Unabridged Dictionary is a necessity.

Given these two works, and you have the foundation of a good library and the means of self-improvement and the education of your family. If you live near a good public library, of course you can get books from there; but if you do not, with good newspapers and magazines and these works mentioned, you can keep yourselves well informed and up to the times. I will not stop to give you hints as to good books; that is easily ascertained through the many lists that can be had from different publishers, although if anyone desires information in that direction I will be glad to answer any questions.

For the Sick Room.

A few things there are which are not only pleasant for a sick room but really necessary, and people would do well to provide them in health, so that they may be at hand when needed. One of these is a variety of different-shaped pillows. They should always be of varied sizes, so that they can be made to fit in anywhere when the patient is either lying down or sitting up in an easy chair. Anyone who has ever had the comfort of the long, narrow pillow placed at the back when lying upon the side will never be without one for a sick room. Then there is a small, fat one to be placed in the hollow of the back when the patient must lie for a long time gazing up at the ceiling. A nice thing, too, is a tiny roll which can be put under the neck when pressure there seems to give relief. Anyone who has had the care of invalids can readily understand the value of this variety of pillows.

An article which was highly recommended by a well-known nurse is a bed table. Perhaps you may wonder what this can be. It is a thin board about 27 inches long by 20 wide, which has a hollow in front like a lapboard, and then put upon four short legs, making it stand about five inches in height. This table can be placed in front of the invalid upon the bed to hold a tray at meal time, or later when the convalescent desires to read or to look at pictures, the fatigue of holding the book or paper being thus avoided. This little table can be made at home by anyone with a little ingenuity.

The following is a description of another one, which can also be easily made at home. Get from a carpenter a nice, smooth board about 18 or 21 inches long, and from a quarter to one-half inch thick. Cover this board with serge or felt. If the felt is used cut it an inch or two smaller than the board, and with mucilage fasten it down smoothly. Another pretty way to put the felt on is to nail it at frequent intervals with the smallest kind of brass-headed nails. If serge is employed, the whole board must be covered, and it must be stretched over flat and fastened down on the under side, then a lining put over that to give it a neat appearance. This will allow of a much thinner board being used than the other way. Now make two narrow rolls a little larger than a pencil, filling them with sawdust. Let their length be equal to the width of the board. These may be fastened one along the top edge and the other about four inches below, making a division which will hold the pens, ink, etc., without their sliding, while the center of the board can be used for writing. If desired, pockets may be made on each side by putting on pieces of cloth and fastening them with the nails if put on after the board is covered, or sewing them on before the covering is put in place. This will contain paper and envelopes. Trim the edges all around with braid fastened down with small nails. The whole makes a very pretty, attractive-looking article, and can be held upon the knee of the invalid without fatigue.

Right here, in speaking of invalids, is a good place to say that one of the best things to give pleasure to one who is confined to the same room for a long time is

to change the furniture and pictures into new places, or bring pictures from other rooms and hang them in the place of those which have been looked at so long. This will often produce an exhilaration that may have permanent good effects.

PLEASURING IN THE COUNTRY.

Entertainments that may be Given for Guests.

"Beyond the dust and noise of town we went,
And in the greener shades we sought content,
And found it there,
Bound in an emerald frame and leafy mesh,
That keeps it from the world all bright and fresh
Away from care."

People in the country are often puzzled to know how to give any pretty entertainments for their friends, or, as they say, how to have a good time without the attractions that city people can readily procure. The fact is, country people in the Summer and Autumn have really greater facilities for a good time at less expense than those in the towns. For instance, if they have a pretty yard with wide-spreading branched trees, or are near to the woods, they can easily arrange for a charming pleasuring. Suppose you desire to give a gypsy party. If you have room about your own house, there is, of course, the best place. If not, load up your materials and go to the nearest woods where is freedom from underbrush, so that sufficient space can be utilized.

As a centerpiece, build a booth in this fashion: Cut or have the men of the family get half a dozen posts—or more, if the booth should be a large one—eight or 10 feet high. Have them planted firmly in the ground. Put another post which is a little taller in the center. Have long, narrow boards to run from post to post and from the center to each post, and then pass in and out rope, making a network close enough to hold the green boughs of trees, thus forming a lovely rustic roof. Wind the posts with evergreen wreaths, putting in flowers, or, if you desire to keep it longer than for one evening, knots of ribbon or anything with color. Of course the whole of the roof and the trimming can be changed when it gets withered and the beauty gone. If the entertainment is to be an evening one, Chinese lanterns should be strung between the posts. At a little distance away a gypsy fire of logs may be built, over which hang one of the old-fashioned kettles that almost every farmhouse boasts. If the entertainment is to be attended by a good many people, then Chinese lanterns can be hung upon the trees and bushes for some distance around the center booth.

Rustic seats easily fashioned can be scattered here and there and blankets thrown upon the ground upon which loungers may pass away the time. All sorts of games may be played. It is always pleasant if in the country there are those who can sing. Especially does this add to the pleasure in the evening. A sort of weird effect may be produced by having the singers in the shadow a little distance away from the guests and singing some of the old melodies which never really lose their beauty. If the gypsy idea is to be carried out, music must be made upon combs, jewsharps, clappers, drums, mouth harmonicas, and like instruments. Those who are near the players must keep time with them by clapping their hands and striking their knees as the music goes on. Of course the refreshments may be whatever the hostess pleases to offer; but at this hot season of the year, cold meats, with sandwiches, fruits, etc., and cold drinks, with ice cream, if desired, are much better than anything else. Of course hot coffee may be served if wanted, but it is quite the thing to have nothing warm.

To carry the gypsy idea still further, the young ladies of the party should appear in gypsy costume. This may be made of red cashmere and black velvet, or if that is too expensive, make the skirt of turkey-red calico, and have a waist of white with a black velvet girdle, or what is better still, have a basque of the red with a white handkerchief placed around the neck and crossed over the bosom. Then put spangles all along the edges of the girdle, trim the skirt with tinsel bands and complete the costume with red stockings and black slippers; large earrings in the ears will add to the effect, and a tambourine with streamers may be carried.

The great thing in all of these entertainments is to preserve their simplicity; have everything as comfortable as possible, but do not try to import any of those things that belong to the entertainments given at other seasons of the year in the city.

A pretty entertainment is what might be called a flower party, given, perhaps, by several young girls to their boy and girl companions. This should be out of doors, also, upon a pretty lawn or grass-plot. In this case several smaller booths may be erected, or, if that is too much trouble, choose pretty places under different trees or near clustering bushes, and let each young girl take some one flower and decorate that place or booth with those blossoms as prettily as possible, using them without any other trimming except the green branches. She should also have her dress of the same color as the flower. Expensive goods are not at all necessary. Cheesecloth at five cents a yard will be just as pretty as anything else. At these booths or corners the presiding genius may offer different kinds of entertainment. One may be a fortune-teller; should there be a singer among the hostesses she may attract to her booth by an occasional song; another may dispense ice cream, and so on. There should be an open center where dancing and games may be carried on. This entertainment in the evening would require, of course, the Chinese lanterns near to give the needed illumination. They may be dispensed with in the daytime, but the young people do not find quite the enjoyment that is given by the gathering in the evening hours with the lights and shadows—the laughter and song and music having added effect from the partial concealment of those producing them.

If it is desired to have an entertainment under cover, a most charming one may be given in the barn, especially if it is one of those large, airy ones which are very common in the parts of country where good farms are situated. It is an easy matter to decorate a barn by using all sorts of branches—hemlock, fir, and everything that does not wither quickly, running evergreens, and all kinds of grasses—all of which are so easily obtainable. A little later, when this kind of entertainment will be even more pleasant than now, the great variety of autumn leaves, with their rich colorings, make beautiful decorations. Then, too, will be sunflowers, golden-rod, corn and wheat sheaves, and even pumpkins may be made ornamental. After trimming the barn with all of these things, leaving the floor clean, Japanese lanterns can be hung around, taking care, however, that they are not put in any place where there would be danger of fire in case they are accidentally knocked down. Then with music for dancing, if liked, or with the many merry games that are just appropriate for such a place, a most delightful evening may be passed away, and you may be sure if there are any city guests they will feel that rarely have they had such a charming time. Of course, at such an entertainment as this, the dress should be exceedingly simple and appropriate to the time.

Should it be impossible to procure the Japanese lanterns for light, very funny and unique holders may be made out of pumpkins, and candles set therein, which will do quite as well as the lanterns. It is best to get candles that burn slowly. Here, as with all out-of-door or rustic entertainments, the refreshments should be very simple, and served by the hostess, with some of her gentlemen guests to assist her.

As may be seen, people in the country may give the jolliest entertainments, costing very little, as the decorations may be composed entirely of the common flowers of the woods and fields, mingled with the ferns and branches that are quite easy to be procured.—EMILY S. BOUTON.

Informal Dinner Menu.

Roast Lamb.	Mint Sauce.	Corn Soup.	French Fried Potatoes.	Poss.
Tomato Salad.	Mayonnaise Dressing.		Cheese Crackers.	
	Blueberry Pie.	Cheese.		
	Coffee.			

Bread or crackers may be served with the soup. If bread is used, it should be cut in squares or oblongs and laid with the napkin at the side of the plate before sitting down.

For the Home Table.

CORN SOUP.

Grate one pint of corn, then put the cobs from which the corn has been removed into three pints of boiling water and boil slowly one-half hour. Remove the cobs and put in the pint of grated corn and boil 20 minutes, then pass through a sieve, season with pepper and salt, and let simmer while you rub together three tablespoonfuls of butter and two even tablespoonfuls of flour. Add this to the soup and stir constantly until it thickens. Then add one pint of hot milk, cook one minute, then the beaten yolks of two eggs and serve immediately.

PICKLED SALMON.

Take one can of salmon and remove the bones and skin and place in a bowl without breaking. Dust the salmon with salt and pepper. Then heat one pint of vinegar, in which put a slice of onion, four cloves, a bay leaf, and a blade of mace. Boil five minutes and pour over the salmon. Set away to cool. Put on a dish and garnish with lettuce leaves or celery tops before sending to the table.

GREEN TOMATO PRESERVES.

Choose small green tomatoes. To each pound of tomatoes allow three-fourths of a pound of sugar and two sliced lemons. Dissolve sugar in enough water to just melt it. Add tomatoes and lemon and boil 20 minutes, then drain and place in jars. Boil sirup a half an hour longer and pour over the fruit. Small yellow tomatoes can be preserved in the same way.

BAVARIAN SPONGE.

Cover one-half box of gelatine with cold water. Let stand for 20 minutes and then add one pint of hot milk, two tablespoonfuls of sugar, and the beaten yolks of four eggs. Boil up once and strain. When cold add one teaspoonful of vanilla and one pint of whipped cream.

PINEAPPLE TRIFLE.

Cover an ounce of gelatine with a cup of cold water and let it stand for 20 minutes, then add two cupfuls of granulated sugar, one chopped pineapple, one grated nutmeg, and the juice and rind of a lemon. Let this stand for half an hour, then pour on three cupfuls of boiling water and strain and squeeze hard. Set on ice to cool. When it jellies whip the whites of four eggs and drop in a spoonful at a time, beating well constantly. When all is in let it harden again and then cover with a meringue in which is grated pineapple.

WORK FOR BUSY FINGERS.

Pretty Things Made Out of Common Material.

One of the most popular materials for making table and stand covers, or covers for sofa and foot cushions, is denim, which comes now in many shades of both

brown and blue and in many qualities. Of course the best quality should be purchased for such purposes. A very pretty cover may be made of the dark blue, which should be first washed in order to take out the purplish shade. Then have stamped upon it some conventional flower or a figure drawn in an ellipse. Arrange these flowers in the form of a border and work them in shaded colors to correspond with the natural colors of the flowers themselves. The detached flowers may be put in the center and connected by cobweb lines of fine silk, or it may be left plain.

A pretty finish for the edge is a row of rings crocheted with silk to match one of the colors of the embroidery. Into each of these rings tie a heavy tassel of silk to match. Two rows of rings may be used instead of one, sewed together, and then silk drawn in closely, following them all around. This makes a very elegant fringe, which must be trimmed off evenly when finished. Another pretty finish to the spread is a heavy lace of the kind now brought for the purpose. This lace should always be mitered at the corners instead of gathered, as would be the case with a lighter and finer one.

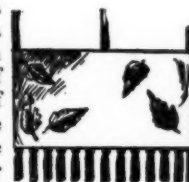
These tablespreads may also be decorated with the brush instead of with the needle. A pretty way is to have them stamped, and then put on the colors of the flowers or figures and follow around the edges with gold thread or a heavy outline stitch of silk to match the flowers.

PIAZZA PILLOW.



This is made in two parts, one one-half the size of the other which is square, and just the width to go comfortably upon the ordinary chair. It is very pretty made of blue denim, a handsome design being stamped upon the large square and then the same thing modified to be placed upon the other. The outline should be done with heavy white thread or cord. Some people like a plain background, and it is quite as pretty for this purpose, leaving the natural color of the denim. These two cushions are finished with a cord upon the edge and then tied together with a heavy cord or white moire ribbon at the corners and in the center. The cushion may be turned either way. If anyone desires a cushion for the back, then the square part is brought in front of the chair; if it is only to lay the head upon, then the narrow one will be more convenient.

Another handsome cushion of denim may be made for a sofa. It should be 18 or 20 inches square, or even 24, as a large cushion is sometimes very convenient. Have a pattern of wild roses stamped upon the part designed for the top of the cushion. Work this either in the rope silk or linen of shaded pinks; make the outer edges of the petals of the roses of a deep buttonhole stitch, and outline the rest of the pattern. The cushion may be either lined with the denim or with pink silk. If the silk is used a double ruffle three and one-half inches wide may be put around the edge, being sewed in when the outside and the lining are stitched together. Another way to finish this cushion is to put a puff of pink silk around the edge of the cushion, sewing it fast. Then make eyelet holes in both top and bottom of the cover and lace them together over a silk puff with baby ribbon or with cord; the first is very effective.



A Japanese Auction.

"Every woman at some time or another has a mania for auction-going," said a young woman who has been around the world several times. "I was just at the height of this fever when papa carried me off to Japan, and consequently you can imagine my delight when, in one of those funny little towns of that far-off land, we learned that an auction was to take place. Here was my opportunity. If I enjoyed the spirited bidding in English, how much more exciting it would be in this unknown land and in the odd little booth that served as the auction room. The first object to be sold was a curious bit of bamboo furniture, and it was held high by the auctioneer for all to see. It did not seem to take, however, for no one said a word, though they all looked hard at it, and then marched off to a black box in the corner, in which they deposited certain little slips. My curiosity being aroused at this, an English-speaking Jap who stood near me explained that it was their method of conducting a sale. The bits of paper represented each one's bid, and when all had deposited their slips the box was opened and the highest amount offered bought the article. Imagine my disgust. No noise, no excitement. It was entirely too prosaic for me; therefore I came away feeling I had been at a funeral."

Decidedly Inaccessible.

Not long ago, at a wedding dinner, one of the guests told this story: In a Western town a small number of zealous people decided to put up a Y. M. C. A. building. A committee was appointed and they sent for a contractor to undertake the work.

When he came the first thing he did was to inquire in a very worldly and matter of fact sort of way into the financial resources of the organization. The President replied:

"Never fear, sir; we are sure of funds; the Lord is on our side."

"That is all very well," replied the contractor, "but I want someone that I can send the Sheriff after if necessary."

SHEEP AND WOOL.

Shearings.

A sheep that takes lots of outdoor exercise can't be overfed. It will stand up under all it can eat.

Severe drouths are reported in western Texas and southern Russia, and many thousands of sheep are perishing.

Experience has taught us that rich pastures will add to the length and quality of wool, and that bad keeping will diminish it.

"Thus far shalt thou go, and no farther," has not been written of sheep husbandry. Progress has been and still is the watchword.

This idea of a flock being kept on the farm too long is all moonshine. The longer the better, provided they are kept healthy and on the uphill grade.

No breeding animal should be forced by high feeding and confinement. In purchasing animals for breeding, satisfy yourself as to how they were treated, or you may wish you had.

Splaying ewe lambs may be safely done when three months old. They rarely die, and grow larger and fatten as easily and readily as a wether. It should be more generally practiced.

There may be cases where the mature wethers of the flock may be held over for their fleeces, but in any case would not a good ewe that would produce a lamb and a fleece be more profitable?

Harrison County (O.) wool growers have been imposed upon by local buyers, and this year are sending their wool to the Eastern market, realizing from three to eight cents a pound more than is offered at home.

Years ago there was practiced a system of "pampering" by certain back-number breeders that hurt the business, and finally hurt the men who practiced it. The sheepmen are still suspicious of a well fixed-up ram, lest it can't be kept up by treatment they give.

A flockmaster in West Virginia has a mountain pasture a few miles from the home place, to which the sheep are taken as soon as sheared, to remain until Winter. It is so pure and cool up there that no diseases exist; even flies are not there to trouble the sheep.

The ewes of a flock are expected to produce lambs every year, but if the season has been extremely bad, and the food supplies are short, the omission of a year would be better than the severe strain of vitality upon animals already reduced to the last extremity.

If a sheep ought to be in good order and is not something is the matter. The first thing to do is to examine the teeth. A loose or broken tooth may explain the situation, and should be promptly pulled out. A pair of nippers ought to be included in the outfit of every sheep keeper.

Maybe the sheepmen will not like for THE AMERICAN FARMER to say they are responsible for dogs killing their sheep, but nine times out of 10 they are. They have carelessly allowed dead sheep to remain where dogs got a taste for mutton, and when they could not find it ready to hand killed it themselves.

Moral suasion is of no use in the case of dogs killing sheep. Very few men are reasonable on such occasions on either side of the situation. The owner of the dog loses his sense of right if he had any, and the sheepman loses his religion, no matter how well-fortified he was against original sin.

Some breeds of sheep, and some sheep of the same breed, eat more than others. While big eaters ought to show best results, it is not always so. It is assimilation of feed that shows the best cash results. This is shown by feeding tests at the experimental stations. Some of these recorded tests are very instructive.

J. R., Richmond, Va., asks the opinion of THE AMERICAN FARMER about a muley merino ram. "Would you recommend using such a ram?" Yes; there is no possible profit or beauty in horns. They are a nuisance, and should be utterly abolished. There is no more use of horns on a sheep than on a horse.

The time to sell a sheep is unquestionably when there is most money in it that can be gotten out of it. If the fleece pays for care and subsistence, and it is not desirable to keep the flock below a given number, it may be well to hold such a sheep until matured; but it must not be held at an expense to the owner. Such a sentiment is unwise.

The improvement of the merino sheep in its capacity of growing wool has received a great deal of attention. Now that mutton has made sheep raising securely profitable, there are new lessons to be learned and more comprehensive methods to be studied. We need a few Bakewells and Ellmans with American blood and brains to Americanize the mutton merino industry of this country.

It would not be a bad plan to watch the local and city wool buyers and see how they manage the wools after they get them. They are well-posted, clever fellows, and will tell you more than you ever dreamed of about selling wool. If they won't tell, stay around and learn in a quiet way. As a rule, the wool buyers get more than the "lion's share" of the profits. It is time the wool growers knew more about how these things are done.

THE AMERICAN FARMER wants the sheepmen to put their best foot first from this very day to the end of the fiscal year, July 1, 1893. We ask if you can't afford to go to the seashore with wife and children, take a week for fun and comfort at home. It will probably pay just as well in health and happiness, and be a pleasant spot in the domestic life, worth repeating each year. Let it be a rest for man, woman, and beast; a real Sunday a whole long week.

It is quite too common to forget and neglect the sheep during the Summer. "Out of sight, out of mind," is the old saw, and too generally practiced with sheep as with everything else. It is a good rule to see and count the sheep once a day, and twice is better. The busiest man on the place may not have time, but somebody else can do it and report regularly to the busy man, who has his money in the flock. "The unexpected is sure to happen" with sheep as with anything else.

Observations on Change of Habitat.

Livingston writes: "It is generally supposed that the want of wool is the natural effect of the climate, and that the wool-bearing sheep upon being transported to low latitudes lose their wool and acquire hair, and the smooth-skinned sheep that are found in most of the West India islands are adduced as a proof of this theory." To account for the fleece character of the sheep found in the West Indies, Mr. Livingston concludes: "The hairy sheep that are found in most of the islands appear to me to bear evident marks of African origin; like those, the rams and ewes have a kind of dewlap of long hair pendant from their necks; they are larger and more active than the common European sheep."

Youatt, in his work on sheep, remarked of the persistence with which English breeds of sheep grow hair instead of wool when introduced into the West Indies. The same was observed with sheep when first taken to the Cape of Good Hope. It was only overcome by careful culture and years of intelligent management that wool was induced to grow again.

The first sheep introduced into New South Wales were obtained from Bengal, and were a coarse, hairy-fleeced race. They were noticed to change their character in a very short time and grow a fine, soft, desirable fleece without resorting to the usual introduction of other breeds. When this was discovered the shrewd Capt. Macarthur turned his attention to the fortunate information he had of the adaptation of the country to the production of fine wool. Not alone did the original sheep change their fleeces on the soil of New South Wales, but the merinos from various countries of the world were found equally responsive to the favorable conditions of the country.

It is a well-authenticated fact that sheep in Buenos Ayres, of merino origin, grew coarser wool than they did in Spain until the changes of grasses on the range suited the production of fine wool. Now no country in pastoral husbandry excels it in fineness of fiber.

It is a well-established fact that the first sheep introduced into Mexico were brought by Cortez after the conquest, and were Spanish merinos. These were the foundation of all the sheep known as Mexican, a coarse, hairy-fleeced inferior sheep. This was due, as every one who has known the character of the pasturage and the utter neglect of the sheep, to inevitable causes.

Vermont sheep, when taken to the West, have always shown variations in fleece values, not to be accounted for by the accumulation of dirt and sand, but in coarseness and harshness of fiber. The change in Western wools that has been going on for several years is accounted for by the close attention to breeding to overcome this unaccountable deterioration. This has, doubtless, been largely the cause of improvement, but not wholly. The pasturage has had its share in altering the values. The coarse prairie grass has given place to softer, sweeter, blue grass, white clover, and other delicate forage plants, affording an even food supply favorable to health, and producing a more valuable, generous, desirable wool product.

While climate has much influence on animal life, there has been some very grave errors in the causes of the variations of wool. They had very coarse sheep in Spain, occupying the same lands side by side with the different types of the merino. They had good sheep, too, by the crossing of the two types. The caprice of man sought to retain the character of the one breed as much as the interest of the other sought to maintain the excellence of the merino.

The fleeces of British breeds partake of the character of the pasturage as much in England as in any country of the world; but in that instance fleeces are secondary to meat, and will remain so. They know more about the effects of pasturage upon mutton than we do.

Feeding Ensilage to Sheep.

After six years' experience, Mr. Woodward considers ensilage an indispensable food. In *Rural New Yorker* he says: "For sheep it is the ideal food. I have thoroughbred Hampshires and Dorsets that have almost lived on it during the past Winter (1891-92). One pen of Hampshire ewes, suckling lambs, have eaten ensilage and straw exclusively, with four pounds of provender (wheat bran, linseed meal and cottonseed meal) to 20 of them, and they will weigh not less than 200 pounds each. I have a pen of yearling Dorset ewes that have not tasted anything but ensilage and straw, and they are fat—too fat, some would say, and weigh over 125 pounds each. * * * To my sheep I give all they will eat up clean, with a daily feed of clover and straw *ad libitum*."

"For sheep I prefer two feeds daily—mornings and nights—with hay at noon for cows and sheep, and straw immediately after the morning feed of ensilage is eaten. * * *

"For cattle, sheep or pigs I much prefer to provide a box large enough to hold one feed, and in this, 12 hours in advance of feeding time, in the morning, we mix the night's feed, and at night the morning's. We throw in the quantity needed, and mix with it the provender, taking great pains that it should be thoroughly incorporated. I have found that it warms up a good deal, and that this has added very much to the feeding value of the whole mixture."

The Sheep Trade at St. Louis.

The *National Live Stock Reporter* says: "The sheep receipts during the year 1891 shows a creditable but irregular increase over the year 1890. There has been a continual shortage of supplies, and the trade would have been more satisfactory with another thousand per day added to the receipts. The range of prices throughout the year was a little below the previous year.

"Total sheep receipts for the year 1891, 282,206; for the year 1892, 347,573, showing an increase of 65,367.

"The prices ranged from \$4.50 to \$6 per 100 pounds, but declines set in until by June \$4.50 to \$5 was realized until December. Christmas sheep sold at \$5.75, and other choice sorts sold at \$5.12½, with fairly good sheep at \$4.50 to \$5. These prices do not represent the selling prices of lambs."

Go and Learn the Business.

Some years ago a young man in the East with a good education and ample means wrote me that he wanted to go West and engage in sheep raising. He asked me for such suggestion as might be pertinent to his case, and to his future success in the business. Further correspondence showed his lack of information about the business. He knew nothing about the details of the business; he knew nothing of the first principles in managing sheep. He caught eagerly at the suggestion to engage himself a year or two with some sheep breeder who would teach him the general principles of successful sheep husbandry; that nothing would be lost by a year or two so spent in gaining definite knowledge. He proposed to come directly to me, and furnished high recommendations from a gentleman, a warm personal friend to me and to him. I studied the matter over and talked it over with my wife, who never made but one mistake in her life. Her judgment agreed with mine; that he could do better by going to the largest sheep breeder in America, a reliable, successful sheep farmer in Missouri.

The only difficulty in the way was the young man refused to have any wages, and the high-toned, honest Scotch (Missouri) sheep breeder refused to take services without pay. After two years, with a thorough training in handling sheep, the young man went to Montana, and is now one of the largest and most successful flockmasters in that fortunate sheep country.

His success is due to the fact that he gained a full knowledge of the sheep business from a thoroughly practical sheep breeder to begin with. A special knowledge of any business requires time and application, and is becoming more and more important all the time. There is no line of business that does not require special fitness if success is attained.

Not long ago the most progressive, intensive, and successful lamb raiser in this country told his friends about going 500 miles in the depths of Winter to study and compare his methods with men who were engaged in the same business. This was business with him, and to-day no more successful, intelligent lamb raiser is engaged in the business. It is a pleasure to say of him he is letting his light shine before men that others seeing his good work may follow him; and they are following him, too.

To every man who has decided to engage in some branch of the sheep business, who has or has not clear and definite ideas on the question, a suggestion is here offered and insisted upon that he go and study the details of some practical man who is a successful business man on the same line. There are some men who are at the front, and it is important that every man who keeps sheep should thoroughly understand the principles that underly the enterprise he is engaged in. There is no luck about the sheep business for the future; it is a question of definite knowledge of details and economical business management. It is a question now that interests all men, to know the best way of doing everything pertaining to the business they are engaged in.

To know this it is necessary to study

other men and their methods, and then compare their ways with your ways.

The Wool of Peru in 1777.

An English writer of that time writes: "Wool makes one of the most valuable commodities of the growth of this country, and is not more remarkable for its fine, long staple than for the singularity of the animal that carries it. It is sheared from a sort of sheep which they call Llamas and Vicunas. The Llamas have small heads, resembling in some measure both a horse and sheep; the upper lip is cleft like that of the hare, through which, when they are enraged, they spit, even to 10 paces distant, a sort of envenomed juice, which, where it falls upon the skin, causes a red spot and great itching. The neck is long like that of a camel. The body resembles that of a sheep, but the legs are much longer in proportion. This animal has a disagreeable smell, but its flesh is good, and it is extremely useful, not only for the wool, which is very long and fine, but as a beast of burden. It is strong, patient, and kept at a very easy expense. It seldom carries above 150 pounds weight, but then it carries that weight a vast way without tiring, eats very little, and never drinks. As soon as night comes the Llama lies down, and no blows can get him to move one foot after the time he destines for rest and food.

"The Vicuna is an animal resembling the Llama pretty much as the dromedary does the camel. He is smaller and swifter, with a finer wool, but otherwise exactly like the Llama in all respects. The wool of these creatures is almost as fine as silk. Probably the famous sheep of Cashmere, of whose wool they make the white cloths so much valued in India, is of this species.

"I cannot ascertain what quantity of this wool is exported, manufactured or raw, out of Peru, either to new or old Spain; but I have reason to believe it is not at all inconsiderable."

The latest statistics of the U. S. Department of Agriculture show the Peruvian export to Great Britain for 1890 of Alpaca, Vicuna, and Llama wool valued at \$928, an increase over 1888 of \$117.22.

An Experience in Grading up a Flock.

EDITOR AMERICAN FARMER: There used to be "sheep epidemics" throughout the West every once in a while among the farmers, especially if wool was high. A man would loose a crop of hogs by hog cholera, and in his disgust would turn to some other plan of making money. The experience I am going to relate was during the war—a very good time to have it real badly, provided it did not last too long. My father bought a flock of Missouri ewes; they were indeed a sorry lot to look at. They had good size, however, and constitutional vigor to rough it was all that could be wished for. They were bought for the purpose of grading up. We had a real attack this time of Spanish merino sheep fever, which a man never entirely recovers from.

A little, greasy, wrinkly, merino ram was finally bought. He had a wonderful close, fine fleece, and though we did not know it then, was just the sort of

a ram for our purpose. The first crop of lambs more than doubled our fleeces in weight, and in the market price, too. A greater contrast could hardly be imagined. The ewes were long legged, bare bellied, with bare heads and legs. The lambs were well covered all over, and had very little hair on hips or anywhere else like their mothers had. Contrary to the rules of good breeding, we kept that ram at the head of the flock for five years, and made the whole lot a merino flock in shearing and fleece qualities. The original ewes were sold after having three crops of lambs. We had merino wethers at three years old that sheared 14 pounds of wool in the dirt, and weighed 140 pounds; that the butchers took quick as soon as clipped at the best prices going. The last year we sheared them alongside of pure bred merino sheep, and beat them in weight of fleeces. We had never known the value of a fine, high-bred ram before, nor did we again hesitate about paying an outside price for a really good one to put at the head of the flock after that experience. There was another point. In the selection of this ram we took the judgment of a man whose experience had been born and bred in him up in Vermont. He knew more about the business than we gave him credit for at the time. If we had paid \$500 for that ram it would have paid us well.—J. J. G., Brighton, Ill.

An Experience With a Rheumatic Lamb.

A young Illinois sheep breeder said: "One of the cold, damp Aprils, so trying on a flock that has been fed poor on corn and hay, one of the best lambs one morning could not go out to the pasture with the flock. Its mother was faithful to it and staid in the yard with it. Later on in the morning it was discovered that the lamb was on its feet quite lively enough to follow its mother, and went to the pasture. The next morning the same experience was repeated. In the evening it would come in without signs of ailing. I concluded it had rheumatism, and treated it by the use of coal oil, thoroughly bathing and rubbing its legs. As I came to this conclusion, I would doctor it regularly, and then carry it down to the pasture and leave it in a sunny, sheltered situation. It is useless to say it got well and became a valuable member of the flock. Some perseverance and coal oil did the work, and I had a valuable experience in guessing what was the matter and repeating many times afterwards."

Spring Lamb for Profit.

The Wisconsin *Agriculturist* is credited with the following: "Early lambs for the Spring market sometimes prove exceedingly profitable, but only when given extra care, feed, and intelligently handled. Not only must the dam be well fed, given comfortable quarters and rich, but not heating, food, but the lamb must be early taught to eat a little chop feed mixed with ground oil cake, and thus put on much more flesh as they grow in size. Only the plump, thick-fleshed lambs command the top prices. The thin lamb is not wanted, no matter how large the frame is.

"There may be some diversity of opin-

ion as to whether we can make mutton a popular meat in this country, but there is no question at all as to the fact about lamb. It is universally considered a delicacy, and brings the highest price of all our meats. It is a luxury that cannot be purchased by those who must practice economy. So long as this is so it cannot but offer a favorable outlook for the producer. If you can grow any meat at a profit it is lamb."

The Culls of the Flock.

By culls is meant the bad sheep of the flock. They may be old sheep and they may be young sheep, but they are the ones no spirited sheep raiser wants a rival to see.

What is the best thing to do with them? Feed them off.

Nearly all sheep breeders have a back pasture, or a back shed, where the culls are kept out of sight. If shown at all, they are shown to visitors at the very last moment and under protest. While it is hardly fair to ask a breeder to show his culls, there is not a better index of his flock both in breeding and in management.

The best sheep breeder in the country always showed the culls first, and they were no disgrace to his farm.

The Contest of Breeds.

The contest of breeds going on in this country is in every particular similar to that adjustment of sheep to agriculture 100 years ago in England. That contest was found to be contingent upon soil and climate as a basis of profitable sheep husbandry. Theories gave place to facts. The bitterest opposition went down before the fitness of breeds for the various habitats found in England. Finally soil, climate, and feeds triumphed, and with each in its proper place the sheep industry was adjusted into a profitable whole with the many breeds of sheep. Changes are still going on, but in close undisputed connection with improved agricultural conditions. This basis is sound.

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THE "BLESSED BEES."

How They Have Fared During the Present Season.

Reports of Beekeepers in all Parts of the Country.

THE AMERICAN FARMER has received the following reports from beekeepers in all sections of the country. These reports, dated from July 30 to date, are of the highest importance and interest to all beekeepers, as they give a faithful picture of the condition of the business at that time, which must be invaluable from its sound information as to the various methods, the conditions in different localities, and the prospects as to the course of prices:

ARIZONA.

Bees are below the average in honey gathering so far this year. We have shipped six car loads this year to date, aggregating 175,600 pounds of extracted and 5,000 pounds of comb honey.—J. A. R. IRVINE, Phoenix, Ariz.

CALIFORNIA.

The honey crop in California is almost a total failure. We will not have enough to supply the local demand.—J. F. MCINTYRE, Fillmore, Cal.

The yield of honey this year is very light, and in many localities bees are short of stores and many will starve. The northern portion of the State will have a very good yield of honey. El Dorado County reports 100 pounds per swarm. Cause for the light yield in southern California is a short rainfall.—JOHN H. MARTIN, Riverside, Cal.

There is only about one-third of an average crop of honey in our vicinity, which is in the San Bernardino Valley. In the Perris and San Jacinto districts, which are generally very successful with bees, I understand that the crop is an entire failure. In some instances the bees will have to be fed. Where I should have from seven to 10 tons of honey I have only from one and a half to two tons.—W. A. CHOATE, Colton, Cal.

The failure of the honey crop for two years in succession is an exception for California; nevertheless, we have this exception to report. In 1891 the product was about one-fourth of a crop, and the present reports indicate that it will be less this year. The bountiful yield of 1890 prevented a scarcity last year, but failures in two successive years will undoubtedly curtail the supply for 1892.—GEO. W. BRODBECK, Los Angeles, Cal.

CANADA.

The bees are doing very poorly in this locality, as we have had a cold and wet Spring. I have not heard of any extracting having been done here.—WILLIAM GUY, Maxwell, Ontario.

COLORADO.

In my locality this is an off year for bees. The fine alfalfa land is being grabbed by capitalists, and lays without irrigation. Price of honey is low.—S. M. CARTZEN, Montclair, Colo.

FLORIDA.

Bees have not done well this year. It was cold and wet in February, March, and April. There has been no orange honey. The palmetto was nearly a failure. The bees took 25 gallons of fine honey from blue palmetto, and from the 5th of July to the 18th took 80 gallons from the cabbage palmetto. This is my crop this year from 15 colonies.—JNO. CRAYCROFT, Astor Park, Fla.

GEORGIA.

Bees are not in very good condition. They have swarmed a great deal, and this, together with a cold Spring and wet Summer, has been very unfavorable to the production of honey. Last year I produced 2,600 pounds; this

year I have not produced one pound. I still hope for enough honey for bees to Winter on, as prospects are encouraging for a good Fall crop.—J. A. CLEMENTS, Greenbush, Ga.

ILLINOIS.

The honey crop last year was so much of a failure that many colonies died from starvation during the Winter. Excessive rains in May prevented bees from getting much from fruit bloom, but since then colonies have rapidly built up, and are gathering a more abundant harvest from white clover than for several years. Owing to the unusual rains in May and June, there is a prospect of a good flow of Fall honey. Heart's-ease in this locality is the principal honey plant after the white clover.—H. A. CUNNINGHAM, Normal, Ill.

The bee business is very poor at present. We have a very fine crop of white clover, and bees are making some honey. The forepart of the season was too wet, and the bees could not work. Last Winter was a hard one on the bees, and I think there must have been a loss of at least 75 per cent. of bees in this locality.—WM. L. MITCHELL, Erie, Ill.

The season opened with very flattering prospects, but there was no secretion of honey. The nights were too cool and the weather too wet. The colonies were very weak in the Spring, with an average of 40 to 50 per cent. Winter losses. There have been very few swarms in this locality. Fall prospects are again very promising.—JNO. G. SMITH, New Canton, Ill.

We have a light crop of clover honey—not over 25 pounds per colony. Prospect for Fall crop of honey is good. The average increase here is 300 per cent.—S. F. & I. TREGO, Sweden, Ill.

I put into Winter quarters last Fall 67 colonies and lost all of them but 30. None has stored any surplus yet. The first show of work in the boxes has been manifested during the last three days. I work for comb honey only. Fruit bloom and white clover produced no honey. Basswood is on now and work has begun.—N. L. STOW, South Evanston, Ill.

Bees did not come out well this Spring. One man has lost 40 stands. I lost three—one by mice, one by robbers, and one by swarming. The latter had plenty of stores and the hive was nice and clean, but the bees would not remain. Why, I know not—they had a queen. Bees had been doing well the preceding three weeks.—R. ATKIN, Morristown, Ill.

The honey in this section seems to be of first-class quality, but from my own experience I do not expect more than an average yield. Prices are moderate.—E. L. HATHAWAY, Table Grove, Ill.

My bees Wintered well and I only lost three out of 65 colonies. They have cast 11 swarms. I kept them in check by going through and cutting out queen cells. At present they are working well, though none of them has the supers of comb honey completed. We are in hopes that the bees will keep at it until they fill sections. This they did not do last year. There are not many beekeepers around here, and those that are interested are almost discouraged.—P. E. VANDENBURG, Jerseyville, Ill.

The honey season is very late here. Bees are in very good condition. The weather is very warm at present, and the prospects are encouraging for a good crop.—A. FIDDES, Centralia, Ill.

The Fall pasturage left the bees in bad shape for Winter, resulting in severe losses. The Spring was the worst I have ever known. It was so cold and wet that when fruit blossoms were open the bees could not get out. White clover came late, and the basswood failed to bloom except in favorable situations. The result is few swarms and little honey.—A. W. CUMINS, Woodstock, Ill.

A cold, wet Spring up to the last of May caused the bees to remain in the hives most of the time. As a consequence there was dwindling and starvation. Since June 10 bees have done well, but there has been no swarming of consequence. The loss of colonies by starvation was 25 per cent. up to May 28. White clover is not very good.

Basswood was good and in full bloom on June 25. A Fall flow of honey looks favorable from heart's-ease, figwort, Spanish-needle, golden-rod, and the asters. But little buckwheat is grown here.—D. A. CADWALLADER, Prairie du Rocher, Ill.

Beekeeping in southern Illinois is a complete failure this year. I have been feeding my bees since February, and have only six colonies left out of 15. Last Fall three died from black diarrhea. We have had a fine crop of white clover, which grows abundantly in all the fields in our County. It has rained about every third day, and this has kept the honey washed out of the blossoms. If Spanish-needles and golden-rod fail to give us a good supply of honey this Fall, we will have to feed the year through. My six colonies will average one pound each.—A. L. W., Metropolis, Ill.

INDIANA.

Last year we had a very severe drouth, which dried up the white clover entirely; consequently we had no honey harvest at all this season. We have a harvest from Fall flowers generally. In Autumn the main resort is heart's-ease.—T. HALMAN, SR., Terre Haute, Ind.

This season has been nearly up to the average for the crop of white honey, though rather backward. The wet Spring and bad weather weakened most of the colonies, so they were not in shape to gather the honey.—F. S. COMSTOCK, North Manchester, Ind.

Our bees are in good condition, but we shall not get any clover honey this year. Our location is on the prairie, five miles from any timber; hence there is no linden honey for us. We sometimes get a good yield of honey from heart's-ease, which comes up in the oat fields after the oats are cut. The prospect is favorable for Autumn honey, but we cannot make any positive statements.—A. C. BUGBEE, Lochiel, Ind.

The prospects of the bee business in this neighborhood seem to be more favorable than for years. Up to basswood bloom the bees seemed to just make a living, as white clover was backward on account of the wet weather. Basswood started swarming rather to excess, but timely showers since have revived the white clover so much that bees are yet working with a vim.—H. L. FISHER, Milford, Ind.

Up to July 4 the honey crop was a total failure. Apple bloom furnished very little honey, and white and alsike clover were also deficient. Frequent rains washed all the nectar out of the bloom. The sun is so hot to-day that it withs all vegetation. Have had seven or eight swarms to date.—E. PERKINS, Bickwell, Ind.

INDIAN TERRITORY.

This has been a poor season; average has been about 15 pounds to date and 10 per cent. increase.—M. HERMAN, Berwyn, Ind. Ter.

IOWA.

Bees are doing well so far this season. The bee business is rather in its infancy in our County.—ELI RATCLIFF, Ida Grove, Iowa.

Two-thirds of all the bees in eastern Iowa died last Winter and Spring, and those that survived are rather too weak in numbers to gather much honey from clover. Most bee-men are running for increase in order to regain their former stock. My bees Wintered well, and were strong when the honey harvest opened; in fact, the season is a good one for those who saved and gave to their bees good attention in early Spring. There will not be much honey shipped from this quarter on account of the scarcity of bees.—FRANK COVERDALE, Welton, Iowa.

Notwithstanding the late, wet Spring, bees have done well in our vicinity. Apple bloom was abundant, but not much worked. White clover came out in fine shape and was well worked. Prospects for Summer and Fall flow good.—J. S. SHEAFFER, Adel, Iowa.

The prospect for any surplus honey here is very slim. There are but few bees left to gather. Seventy-five per cent. of the bees died. I had nine colonies left alive the 1st of June out of 57 last Fall.—S. J. CHURCH, Cedar Rapids, Iowa.

Prospects for honey crop are good. Bees have stored no surplus to speak of in central Iowa for three years. Loss last Winter over the State was fully two-thirds.—J. A. NASH, Monroe, Iowa.

The average Winter loss was 30 out of 100. There was a wet Spring and no honey until June 15. There has been excessive swarming, and as this prevents surplus the yield will be about the average. Basswood bloom was cut short by hot, dry winds. With a good August bees will be in a fine condition for another year.—WILLIAM CONNELLS, Ogden, Iowa.

The past Winter has been the worst we ever experienced. Seventy-five per cent. of the bees died. The crop of white clover honey will be short. Bees are swarming more than usual. Prospects for Fall honey are good.—M. MILLER, Le Claire, Iowa.

So far this season bees have made a great amount of honey, the pastures and meadows being white with white clover blossoms. There are not one-tenth of the stands here this season that there were last season. One man lost 50 swarms out of 60, and another lost 30 of 33. Usually this is a splendid country for bees, and the white clover is very abundant. In the early part of the season basswood blossoms furnish honey for the bees.—MRS. R. ROOT, Root's Siding, Iowa.

Last Fall I fed a few colonies of bees on honey dew. They Wintered well and died in the Spring. Fed some in the Spring, and they died, too. I think fully one-half the bees in this County died last Winter and Spring. They are doing very well this year so far, but are not swarming much. My first swarm issued June 9, and has given me 56 sections of nice, white honey. There will probably be an average crop here this year.—LEE POWELSON, Batavia, Iowa.

About two-thirds of the bees in this section died either in the Winter or Spring. What were left have built up good colonies again and are just beginning to swarm. They are making lots of honey now, but it is so late that I cannot say how they will come out. My loss was 16 out of 24 colonies.—JAS. W. MILLIS, Rock Dale, Iowa.

KANSAS.

Went into Winter quarters with 30 colonies on Summer stands, and went through the Spring with 24. But six have swarmed to date. Ten supers, consisting of 10 Langstroth frames, are full. Prices here average from 12½ cents for extracted to 15 cents for comb honey.—J. H. COOK, Parsons, Kan.

Beekeeping is carried on extensively in this part of Kansas, and almost every other farmer has from three to five hives of bees. Most of the keepers, however, are inexperienced. Bees have been doing well during June and July.—F. HONER, Hanover, Kan.

The yield of honey in this locality has been very poor this season. We expect to get our large honey flow in September.—ABEL JONES, Aliceville, Kan.

KENTUCKY.

Bees are generally kept in box hives here and but little attention is given them. White clover is the main dependence for surplus. Fall honey flow is usually good from Spanish-needles, smartweeds, etc. Bees generally Winter well on Summer stands. This Spring was too wet for the beekeeper, causing the loss of many colonies from starvation. In July the bees did fairly well. Indications are good for a liberal Fall flow.—HUGH L. LYNN, Glenville, Ky.

LOUISIANA.

Bees in this section do very well when the yield is not destroyed by drouth or continual rains. They need more honey to Winter here than elsewhere.—S. F. JOON, New Orleans, La.

Bees are at home here in the hollows of trees, and when domesticated make a little more honey than is necessary to keep them through the Winter. They rely mostly on tree blossoms and honey dews for their supplies.—JOHN L. SMITH, Hammond, La.

MAINE.

Bees are doing very poorly here this year, on account of the cold and Wet Spring. We

had Spring dwindling, and as it rained nearly the whole of the clover season we shall have very little surplus honey. We are hoping the Fall flowers will give us our Winter stores.—S. H. STOCKMAN, Auburn, Me.

MARYLAND.

The season in this part of Maryland has been peculiar, and an excellent one to demonstrate the utility of intelligent management. Box hives and neglected bees have barely existed. Early in the season I recognized the fact that I would be unable to give my bees much attention, so I set apart 15 of the strongest colonies to manage their own business. The remaining 13 were weak and had my sympathy and attention. From these I have taken about 300 pounds in one-pound sections, and there are possibly 100 pounds more in sight. From the 15 strong ones I took not more than 100 pounds, making a total of about 500 pounds.—WM. S. ADAMS.

MASSACHUSETTS.

The few bees that are kept in this town have done very well. No honey for the general market. I think I am the only one in this vicinity who keeps them in movable frame hives. They will work a while without a queen, and sometimes will enter and go to work on old combs if the queen becomes lost at swarming time.—ASA M. SWAIN, Tyngsboro, Mass.

MICHIGAN.

The bees did not Winter well. We lost five colonies out of 11. Some of the honey gathered last Fall was not very good for them to Winter on, and some of them raised too much brood through the Winter. They are doing better now than they did last year. All of my colonies have swarmed. They have brought in a fair lot of honey. I think there will be a good crop this year.—MISS STELLA M. JONES, Midland City, Mich.

The bees are doing well this season in this section, but a large per cent. died last Winter. Farmers, as a rule, don't think it pays to keep only a few swarms. I find it has become too much of a science and takes too much of my time.—J. H. MACOMBER, Fremont, Mich.

My bees Wintered very badly and I lost 50 per cent. of them. We had a very cold, wet Spring. They are doing very well at present. We will not have much white honey this season. The prospect is good for buckwheat honey.—R. NIVEN, Bay City, Mich.

I have kept bees here for 10 years. The location is only two and one-half miles from Lake Michigan, and as the timber is gradually disappearing, the bees seem to disappear with it, as it becomes more cold and windy in the Spring.—D. S. BENEDICT, Ludington, Mich.

Bees in this section have done poorly since 1880. During this Spring they made enough to build up in strong shape. But up to the 18th of July there was no surplus. Now the hives are full of basswood honey. Basswood bloomed late this year, and the weather is fine. The prospects for buckwheat and other late honey are good.—WILLIAM E. GOULD, Brookside, Mich.

Some apiarists have lost all, and others nearly all, of their stock. About 60 per cent. died on an average. On account of the wet weather we got no honey until basswood bloomed, which was July 16. It lasted in my locality about 10 days. Our bees made about 20 pounds of comb honey to the colony, besides filling the lower stories of the hives. This is the fourth successive poor season we have had, and a great many keepers are discouraged. Everything points to a large yield of Fall honey.—G. CROUSE, Ithaca, Mich.

The condition and prospects of the bee business in my neighborhood are very bad. In my apiary of 50 colonies the increase is only two, and no honey has been taken yet. There has been too much rain, which has caught the bees and kept the colonies weak.—G. A. BLECH, Moscow, Mich.

There are not many bees here, and what few are here have not done very well since the Summer of 1891, which was very dry and prevented the bees from making much honey. The Spring of 1892 was dry and cold, and they had no chance to do anything. July has

been nice and warm, and they are doing quite well at present.—JOSEPH A. ZELLAUT, Sitka, Mich.

I lost some bees during apple blossom. They are now doing splendidly on white clover and basswood. They have done better this year than for two years past.—H. WEBSTER, Byron, Mich.

May contained 26 rainy days and June 21. This made it so wet that little honey was gathered. I had one swarm issue in May and two in June. The rain ceased on July 3, and it has been hot and dry since. Bees collected honey quite fast from July 6 to July 18, and have commenced the swarming season from four to six weeks later than usual. Everything is suffering from the drouth, and unless we get rain immediately there will be a short crop.—A. J. WIGENT, Montgomery, Mich.

This has been an off year for the beekeepers in this section. My report is probably an average in this County. I put 41 colonies in the cellar last Fall, and lost 10 of them by Spring dwindling. Have now 25, one-half of which are gathering surplus from basswood, and the remainder building up prospects for a fair Fall yield. We will get 500 pounds extracted honey. I have kept bees for nine years, and they have never dwindled so badly as this year. I shall extract very slowly and feed sugar for Winter. Comb honey will be very scarce.—J. M. CLARK, Hillsdale, Mich.

Stocks are in fairly good shape for Fall pasture. Owing to the wet weather white clover was a failure until the 4th of July. Some bees had to be fed to be kept from starving. Have had no surplus yet. Very few swarms. Taking everything into consideration, this has been the poorest season we have had for many years.—A. W. GARDNER, Centerville, Mich.

There has been too much rain here for the good of the bee business. It rained most of the time clover was in bloom. I have over 50 colonies of bees. I have not had a pound of honey yet. Other years by this time I would have had 2,500 pounds. I do not expect to get any. Flowers are all dried up, and we have had no rain since the 3d of July. If something does not turn up soon the bee business will be an entire failure.—A. P. LAWRENCE, Hickory Corners, Mich.

There are few beekeepers in this locality. I have 80 colonies in good condition. I use chaff hives with Langstroth frames. My crop this year will be very good, as there is lots of white clover, and golden rod and buckwheat will be plenty.—J. B. GREEN, Mosherville, Mich.

Bees in this locality have been in a starving condition up to July 4, but since that time strong colonies have filled a case of 28 sections. Up to this date, July 30, but one swarm has issued out of 50 colonies, and that not until July 15.—RANDOLPH GRADEN, Taylor Center, Mich.

I commenced keeping bees six years ago. They have done well except during the last three years, when they have been a total failure. My advice, however, would be for every farmer to keep at least a few colonies of bees.—JULIUS CASTLE, Fremont, Mich.

Bees Wintered with a loss of about 25 per cent. The very cold and wet Spring was unfavorable for the secretion of nectar. Honey will average about 20 pounds per colony, Spring count.—J. M. KINZIE, Rochester, Mich.

Nearly all the bees in this neighborhood died last Winter from starvation, and what were left were weak. However, they have built up now, so they are doing better than they have for five years past. I have doubled my colonies, and they have made at least 50 pounds per colony, Spring count. Basswood is just at its best, and if we have a favorable Fall, bees will be worth having this year.—MRS. PARKER ERWOY, Hastings, Mich.

The forepart of the season was so wet and cold that the bees did nothing, but for the last three weeks they have been doing very well. We are having a large flow of basswood, but we need rain now, as it is getting

dry. Honey is worth from 10 to 15 cents per pound. We live in a good locality for bees.—S. D. GILLSON, Eureka, Mich.

The bees in this locality are not doing very well. It has been too wet for them. There will be a small amount of honey this year.—O. C. OLSON, Holton, Mich.

We usually have three honey flows here in a year: June, clover; July, basswood; August, wild flowers and weeds. In June the crop was an entire failure, in July we got half the usual amount, and the prospects for August are very discouraging. There has been almost no increase at all.—JAMES HEDDON, Dowagiac, Mich.

MINNESOTA.

This season in this locality has been late and too wet and cold. The bees have hardly got enough to live on. They have stored but little surplus honey, and clover is now getting poor. The crop of white honey will probably be very light, and I do not anticipate very much Fall honey. I think a field of alsike clover on my place has been the source of most of the honey stored up to this time. I have 60 colonies, old and new.—J. W. ROLLINS, Elgin, Minn.

There are quite a good many bees kept in this country, but we have had two very bad years for honey. So far this year it has been very wet, and bees have hardly made honey enough to live on. Most beekeepers have lost from one-quarter to three-quarters of their bees. Some have lost all. The season is so far advanced that I think there will be but little surplus honey.—E. C. PEASE, Hamilton, Minn.

Bees in this locality do well generally, but most everyone has lost from one-half to two-thirds of their bees. I only lost six out of 65. The Spring was cold and wet, and up to June they were in a starving condition. They have begun to build up fast now. Basswood has just opened.—GEO. H. AURINGER, Bodniwell's Mills, Minn.

Where properly managed bees are now in good condition for the linden bloom, which will open in a few days and will be immense. The prospect for Fall bloom looks well. The Spring was wet and cold and the bees dwindled badly, many losing all they had. I have been in the business for 10 years, and think this County is as good as any in the United States for a practical apiarist, but it is no place for "fence-corner" beekeepers. My crop for 1891 from 91 colonies was over 7,000 pounds.—J. M. DOWDRA, Alexandria, Minn.

Bees in this part of the country are doing very poorly. I hardly think we will get any white honey this season. The prospect is good, however, for a good Fall crop, and the bees are busy now getting in buckwheat honey.—EDWIN CROWELL, Granger, Minn.

I have 84 colonies of bees, all in good condition, and nearly all storing in the supers. They were taken from the cellar last Spring, and suffered but little loss from Spring dwindling. They built up rapidly on fruit bloom, and were in a fair way to be ready for the white clover harvest; but right after the fruit bloom we had four weeks of continuous wet weather. During this wet spell the bees were set back to about the same condition that they were in when taken from the cellar. At this writing the white clover is nearly out of bloom and the bees have built up finely, and have filled the base of the hives with clover honey. If we have good weather now for two or three weeks we will have a fair crop of honey.—C. H. POND, Kasson, Minn.

Prospects are poor. Clover and basswood are about over. I have but one super filled with honey as yet from 14 colonies. We are all looking for a good Fall flow.—J. W. MCCARTHY, Plainview, Minn.

MISSOURI.

Owing to a partial failure of the honey crop for the last three years, our prospects are not the brightest; but as it is a poor rule that will not work both ways, the same conditions cause a brisk demand, and prices are climbing. The better class of apiarists have not lost their grip, and are looking forward to '93 for more favorable results. The quality

of sirup for '92 cannot be excelled, but the sections are poorly filled.—MRS. J. M. NULL, Miami, Mo.

On account of a cold, wet Spring the honey season here is very late. The crop to date has only been 30 per cent., on a basis of 50 pounds per colony. Prospects are good for a Fall crop.—R. C. EWING, Jr., Liberty, Mo.

This has been a hard season on bees in this locality. They were strong and in fine condition on the 1st of April, but about one-half of them died before May 15 on account of bad weather. Prospects for a honey crop are very poor, as we do not generally get much Fall honey. The outlook is not very encouraging for either the dealer or beekeeper.—ST. JOSEPH APIARY CO., St. Joseph, Mo.

Bees are in fine condition here, and everyone who has bees is making a great deal of honey. I always put on my money boxes as soon as the bees begin to work in the Spring. In this way they can have plenty of room to work, and will not swarm too soon.—R. L. WINDROE, Booneville, Mo.

NEBRASKA.

Bees in this locality are in a very prosperous condition, and at this time are storing honey rapidly. I have kept bees for four years and have procured an average of 100 pounds per colony of comb honey. In my opinion, beekeeping is worthy of more attention in the United States.—F. R. REITER, Phillips, Neb.

The Spring was very wet and cold here until the 1st of June, and since that time it has been very fine. Bees have done well, especially in districts where there was an abundance of alsike clover. In some places there has been a good flow of white clover honey. Our honey here is gathered from the heart's-ease or smartweed. It comes on after the 1st of August and lasts until there is a heavy frost, generally the last of September. The favorite bee here is the Italian. It will be but a short while before Nebraska will rank with the best of honey-producing States.—CHARLES WHITE, Farmer's Valley, Neb.

NEW HAMPSHIRE.

My bees Wintered without loss, coming out of Winter quarters in good condition. They built up well in the Spring and swarmed moderately. Are in good condition now.—J. P. SMITH, Sunapee, N. H.

Bees are doing very poorly this year. Upon inspecting my hives in two of them I found the bees entirely gone. Upon the bottom of the hives was a substance resembling black dirt about three inches deep. What honey comb remained was filled with white grubs, which, I suppose, destroyed the bees and honey.—HORACE A. HAYES, Groveton, N. H.

NEW JERSEY.

I am the only one in this neighborhood that uses the movable frame hive. I have eight strong colonies in the dove-tailed hives, and one old box hive. Seven of them are Italians and two German or black. We have to depend on Fall flowers for surplus honey, as there is no basswood or clover, and no buckwheat.—J. E. PRICARD, Port Norris, N. J.

NEW YORK.

Bees brooded up very strongly this Spring, but on account of the wet weather we have had for the last six weeks they have done nothing to speak of. The prospects for any surplus this season are very poor. I have had 49 swarms, and have not taken one pound of honey. Last year at this time I had over a ton. This is a very poor season, indeed.—R. H. BAILEY, AuSable Forks, N. Y.

Bees in this section have had a hard time. There has been very little surplus to this date. Our surplus comes from basswood, which is just opening. It is usually in full bloom by July 4. The problem of a honey crop in this section is to be solved within the next six weeks.—J. E. HETHERINGTON, Cherry Valley, N. Y.

It is too early to tell what the harvest will be, but the outlook is favorable for a good crop of white honey. Bees are working nicely now on basswood, and the white clover will be quite plentiful after the basswood.—GEO. T. WHEELER, Mexico, N. Y.

The long-continued cold, dry weather of May was the cause of very much Spring dwindling, and many colonies perished. It has taken a good share of the season to breed up to the securing of a surplus capacity; consequently there has been very little increase and a much smaller storage. The season thus far has not been up to the average.—O. L. WHITCOMB, Argyle, N. Y.

Bees are two weeks later than usual, but prospects are very good for a fine basswood flow. Average per colony to date is 40 pounds of comb honey. Rains now seem to indicate a good Fall flow. My report is: Number Fall colonies, 75; number Spring colonies, 72; average pounds to date, 40; increase, 28.—L. C. JUDSON, E. Sidney, N. Y.

There was a heavy mortality among bees in this locality last Winter. This is particularly true of farmers who had but few colonies. I lost but two out of 55 colonies. Bees are booming this year better than before in 10 years, and honey is plenty.—I. N. WARNER, Elba, N. Y.

The crop of white honey is very short in this locality. I will have an average of five pounds per colony from 161. Neighbors report about the same. It is too early to tell what the Fall crop will be. This is the fourth short crop we have had in this part of the State.—W. S. WARD, Fuller's Station, N. Y.

Although this season has been much better than the last three or four, the crop is by no means as large as in former years, as '78, '83, '86, etc. Twenty-five pounds is a good average this season for light honey.—F. H. CYRENNIS, Oswego, N. Y.

The last Winter was most severe on bees in this section, and not much honey was gathered until white clover bloomed. Then basswood came with a rich harvest, the weather being favorable for the secretion of nectar. Bees had a favorable season for breeding, and since the cold in the forepart of the honey season they have collected much more stores than in several preceding seasons, and the propolis season still continues with hopeful prospects.—C. J. ROBINSON, Richford, N. Y.

This year has been one of the worst I have experienced since I have been in the bee business—25 years. I run about 60 colonies for comb honey. I made an examination this morning, and did not find a single section filled. There have been but few swarms. There is no nectar in the flowers. Buckwheat is in full blast, but the smell of the honey is hardly perceptible in the apiary. This is the report of about 30 beekeepers with 700 or more colonies in Albany and Green Counties.—H. W. GARRETT, Coeyman's Hollow, N. Y. NORTH CAROLINA.

Our honey flow is not as good as usual. We always get from 10 to 12 cents for extracted honey and 15 cents for section honey. Our honey is all marketed near home, and we get the finest honey in the world from sourwood bloom.—M. G. SHEARER, Collettsville, N. C.

OHIO.

The prospects for a big crop of honey are not very good. The late Spring and the cold wet weather have cut it a little short. I think we will get about 30 pounds of honey to the colony on an average.—NOAH THOMAS, Horatio, O.

Bees in this locality were at starvation's door until basswood opened. Owing to the excessively wet weather, white clover was a total failure. My bees will average 30 pounds of extracted honey per colony. The large number of bees and the poor season will prevent us from raising comb honey at a profit.—M. W. SHEPHERD, Rochester, O.

Bees worked about one week on basswood, and that is about all the good they have done, except when apples were in bloom. Will have enough stores for Winter, with very little surplus from basswood. There is very little white clover here.—W. A. KIRTLAN, Salem, O.

Bees are not doing very well and prospects are poor. Have had very few swarms and very little surplus, which is comb honey. With a

loss of from 25 to 50 per cent. last Winter, no swarms and a light clover crop, bees will be scarce and very valuable next Spring.—LAWSON HEGLER, McLean, O.

Bees are making but very little surplus in this section, and what they have made has been gathered from basswood. The season has been so wet that some of the bees could not gather enough to live on. Beemen in this section are getting badly discouraged and some are going out of the business.—J. H. GRATE, Yale, O.

Bees have done well this month. They have filled everything, hives and all, with honey from basswood and chestnut. But the flow of honey has stopped now, and will not commence again this year. White clover has produced no honey for four years. Bees in good hives Wintered well last Winter.—V. MCBRIDE, Chardon, O.

The honey crop in this part of the country was a poor one. White clover is our principal source, and when it fails our honey harvest fails. We hardly ever have a Fall crop. I do not think an average of 10 pounds per colony has been raised in the State of Ohio, although my own average was 25 pounds.—CHAR. F. MUTH, Brighton Station, Cincinnati, O.

The honey crop is more of a failure this year than it has been since I have been in the business (18 years). As far as my observation goes there will not be more than five pounds of surplus to the colony. We have had too much wet weather. White clover has done nothing. Bees were in a starving condition on the 4th of July when basswood commenced to bloom.—C. BERKLEY, Savannah, O.

The late and cold Springs and hot and dry Summers have prevented the bee business from paying in this locality for the last three or four years.—ISAAC N. DEARDORFF, Canal Dover, O.

OREGON.

Bees have done very little here so far on account of the rain, but it is not too late for Fall honey.—C. WANTY, Rainier, Ore.

Beekeeping is not a success in the Willamette Valley, Ore., for want of honey-producing flowers. In the coast mountains and along the foothills of the Cascade Mountains it is a partial success some years.—DAVID CRAIG, Macleay, Ore.

PENNSYLVANIA.

The bee business in this neighborhood will not pay this season. We have had very few swarms and little honey. On account of the wet weather the bees could do but little work.—J. A. SHADE, Waterside, Pa.

Bees in this neighborhood are doing well, considering the fact that we had so much rain in the early part of the Summer. My bees have nearly as much honey now as they had last year late in the Fall.—B. ANNIE RYNEARSON, Huntersville, Pa.

TEXAS.

Bees are doing tolerably well here, though this is not the best bee and honey section of the State. Western Texas, in the Mesquite region, is about the best in the world, in my opinion.—J. C. MELCHER, O'Quinn, Tex.

VERMONT.

Bees in Vermont have done very poorly this season. Through May and June there was a large amount of clover, but there was no honey in it. The coldness of the weather caused the lack of honey. Basswood is in full bloom now, and the bees in my section are doing finely. We shall get a fair crop of honey.—V. V. BLACKNER, Orwell, Vt.

The honey crop will be light this year—about one-fifth of that of last year. My surplus was 221,000 pounds of honey. This year it is not far from 4,000 pounds. I think, besides, bees will have to be fed for Winter.—J. E. CRANE, Middlebury, Vt.

WISCONSIN.

Bees came out of Winter quarters fairly well, but the Spring was so backward, wet, and cold that they were hardly able to get out by the middle of June, and many were lost. There will be a very light crop of clover

honey, and very few new swarms. I have only 40 colonies out of 100 last season. Prospects are favorable for a fair Fall yield.—S. C. PALMER, Almaksee, Wis.

The bees are very weak on account of the excessive rains. We had 53 days of rain in May and June. We have had heavy losses in this part of the country. At least 60 per cent. of the bees are dead, and the prospect for a honey crop is very poor. Clover is no good. Our main crop is basswood, and that is almost an entire failure.—W. J. PICKARD, Richland Center, Wis.

BUREAU OF INFORMATION.

Amos Wilkes, Janesville, Wis.—Cotton may be made fireproof by soaking it in a solution of six parts boric acid, 15 parts sal ammoniac, three parts borax, and 100 parts water.

Geo. H. Burns, Easton, Pa.—The mysterious rappings which so alarm your nervous family, and which are called "death watches" by superstitious folks, are produced by the destructive little beetles which bore holes in the dry wood of furniture and finishings. They are about one-quarter of an inch long, and the raps are made by knocking with their heads, by which way the sexes communicate with each other. They know just about as much about any impending death in your family as they do about the Homestead sliding scale, and no more.

J. Q. A. Gilmore, Lewiston, Me.—You can destroy the disagreeable and sickening odor in your newly-painted rooms by putting in them, one after another, a pot or other suitable vessel containing burning charcoal, and throwing on the coals two or three handfuls of juniper berries. Shut the windows, close the chimney entrance, and fasten the doors. Twenty-four hours after this the room may be opened, when it will be found that the smell will be entirely gone. Tapestry or hangings in a room will not be injured.

E. J. Galbraith, San Antonio, Tex.—The oldest college in the country is Harvard, which was founded in 1636; next in seniority comes William and Mary, founded in 1693; and the third is Yale, founded in 1701.

O. B. Clark, Pritchard's O.—The moon is 240,000 miles away from the earth. Her diameter at her equator is 2,153 miles, or about one-fourth that of the earth. She has a surface of 14,600,000 square miles, where the earth has 197,000,000 square miles, and a solid content of about 10,000,000 cubic miles, where the earth has 260,000,000 cubic miles.

A. J. Vaille, Tecumseh, Mich.—"Bibliomania" means the consultation of the Bible as an oracle, and deciding some matter by the text of the verse opened to. It is a very old practice, and was at one time quite extensively followed. A very large proportion of the Mahometans resort to the Koran in the same way, and determine what they will do by the augury of the first verse opened to. The records of the Catholic Church show a long warfare against the practice among Christians. As early as 461 the Council of Varennes denounced the practice, and several Popes specially forbade it. Despite this, it continued to be in pretty general use, and even high church dignitaries resorted to it. The Reformed churches, by their strenuous insistence upon the Bible as their rule and guide in all things, helped greatly to revive and extend the practice.

G. D. Guilcher, Versailles, O.—We cannot say what is the most intense degree of cold known. Some politicians say that it is found in the immediate neighborhood of the head of the present Administration. Fahrenheit thought that he had found the greatest degree of cold when he made a mixture of snow and ice, and established that as the zero of his thermometer. It was soon found that he had placed his zero far too high. Now, scientists talk of cold in the inter-stellar space, which is 400 or 500 degrees below the freezing point of water.

H. A. Bradley, Newcomerstown, O.—There is nothing whatever in the story that Edison has invented a war machine by which towns can be destroyed at the distance of 30 miles. He has not even started to consider such a machine.

Wm. A. Frump, Bentonville, N. C.—The life laws of oaks vary greatly with the different species, but in a general way it may be said that the oak grows from 120 to 200 years,

and may live 1,000 years. There are many oaks in England which are from 800 to 1,000 years old. The oak begins to bear acorns as early sometimes as its 50th year, but more generally in its 70th or 80th year. It then bears every year, but gives large crops of good acorns only once in five years.

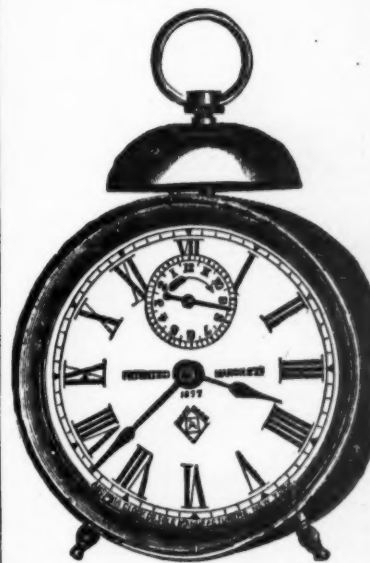
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THE DAIRY.

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There is no product sold from the farm which removes from it so little of fertilizing matter as does butter.

The dairying business is of a nature particularly well calculated to preserve or build up the fertility of the farm.

Butter making and cheese making are the outlets for milk, independent of that which is sold to consumers, that are well worthy of the attention of farmers.

The buttermaker must form his ideals of perfection of the dairy cow by those traits, which he learns from experience, points to the best pecuniary returns from his dairy, and not from a beef standard.

The devotion of the English farmers to their dairy is quite remarkable. They watch the skies and pastures on account of this industry, and from it they count their surest and most constant income in favorable districts.

A well-bred sire, with strong powers of transmission, when coupled with dams irregularly bred, will transmit his own qualities to a much larger proportion of his progeny than when coupled with pure-bred females of opposite characteristics.

A well-known New England dairyman when asked what breed he would recommend to grade-up stock with replied: "For butter making I would recommend the Jersey and Guernsey; if my object was the production of milk, I would recommend the Holstein or some breed of larger growth."

It is often argued that it costs much more to keep a herd of cows producing 300 pounds of butter a year than one producing one-third that amount. While practically it usually does cost more, yet this is not necessarily the case. The difference in amount of butter produced may result from a difference in adaptation alone.

The dairyman cannot afford, because of poor markets, to lower the quality of his stock, but it is the best policy to secure the best at the lowest possible price. He cannot afford to pay fabulous prices for blooded cows, to be used for practical dairy work; yet he can afford to grade up his cows so as to secure good ones for his purpose.

Dairymen too often overlook the matter of development of young dairy stock. Breeders of trotting horses well understand that success with them depends very much upon the early development of their colts. How many dairymen are aware of the fact that a proper development of young stock is quite essential to success in the dairy as in the stud.

In small dairies the churn should determine the individual merit of a cow. But, before you adopt your conclusion be sure to give a trial which will be long enough to be convincing. Many cows will do well for the first three or four months, when their flow of milk will diminish, and at the end of eight or nine months they will dry up even with the best of food and care. Such cows should be taken out of the herd.

HOME DAIRY CHEESE.

How to Make Absolutely Full Cream Cheese.

EDITOR AMERICAN FARMER: It is not my purpose to attempt to advance the interests of the dairy farming by giving instructions to cheese makers or factory butter makers. They have learned their trades, and the numerous creamery journals of the day have all the latest and most skillful information that can be made known by the pen. Farmers who are isolated, or those where the hauling of milk to cheese factories is impractical, can do a home dairy manufacture of cheese, and make a very profitable business of it through the Summer season of the year; in Winter time they can manufacture butter. Cows, to make good cheese, should give milk rich in caseine.

In my County we now have about 50 cheese factories. A few years ago we organized a board of trade that represented over 40 factories, and we brought cheese from all these different factories to our office rooms, one day each week, in this little city, and there sold it to dealers from all over the country. Thousands of dollars worth of cheese were here sold every week; also at these meetings we would discuss all phases of the business. It was the general conclusion that the Ayershire breed of cows were the best cows for cheese; next to them Holstein, and third, good, selected, native cows.

By using thoroughbred Ayershire sires in a few years with the great milkers of our native cows we have made some excellent dairies for cheese manufacture. Farmers must raise their own cows to get good ones, for no breeders or farmers will sell his best cows except at extravagant prices. Cows for the manufacture of cheese ought to average 6,000 pounds of milk annually, and they can be made to do so if selected carefully, as heretofore advised, and fed on pasture grasses and ensilage feed.

Cheese made in the Winter months, and, in fact, until May 1, is never of very good quality. It requires hot rooms to cure cheese quickly, hot both day and night. Milk must never freeze. The cheese is apt to be sour and bitterly curds when made in any of our factories in December or later, so from Dec. 1 to May 1, I should advise every dairy farmer to make butter from his milk.

The cows for the cheese business should come in fresh milk during the month of April, if possible. Then you have the largest flow of milk in Summer time, when needed. The home dairy that attempts the cheese business must expect to make it a life business, and must fit up a cheese room properly for it, and, before they ever commence the business, they ought to spend at least one month's time in a good cheese factory, and make it a business to learn how to do the work. It should be the same member of the family that will always do this chore.

The new cheese vats, with heaters attached, cheese presses, and all the dairy requirements are now manufactured so perfectly, with instructions so complete, that it is no trouble whatever to secure all that the dairy needs for about \$100. And this will run a first-class home dairy

for from 30 to 50 cows. I should never advise any farmer to make cheese unless he had 20 good cows or more—far better run a butter dairy with a smaller number.

The most important requirement in the whole business is to make an absolutely full cream cheese; one that will melt in your mouth almost as easily as butter; one that will assimilate quickly with the gastric juice of the stomach, and aid digestion; one that you can swallow and not bring tears to your eyes on account of its hard, woody white-oak features, as if made of skimmed milk. In short, such a cheese as will win you the title of an honest man. The first premium cheese of Ohio has been made for many years at the home dairy, and no factory can equal or excel it.

Why? Because the milk is perfect, and its quality is not injured by hauling long distances in hot weather. Everything about its care is far in advance of what any cheese factory can possibly secure, and for this reason the home dairy, when the farmer has got the skill to manufacture his cheese correctly, has the advantage. We have a few, very few, such cheese dairies in Ashtabula County, O., and not a single pound of such cheese do they ever sell for less than 10 cents per pound at wholesale. Grocery merchants are very anxious to get the entire output of such dairies, and usually contract for the whole product of the farm every year.

I won't buy any other kind of cheese but this, nor eat it, if made of skimmed milk. Our full cream cheese does not require quite 10 pounds of milk for a pound of cheese, and if we could, by law or gospel, put an end to the manufacture of skimmed cheese it would relieve the cheese business of its greatest enemy.

Our reputation all over the world would be improved as if by magic, and the home consumption of cheese would grow to immense proportions. Farmers who patronize the cheese-factory system nearly all desire to steal the cream for butter, and if they do leave a little then thousands of cheese factories will hold the milk in cooling vats a few hours and skim it, and by time it gets into cheese it is a terror to the human stomach and the ruin of the trade.

For the last 10 years every factory is waiting for the others to reform first. The home dairy never had so good an opportunity to find ready sale for good cheese as they do to-day, nor could it ever make money so fast as it can now. Our men who do this work correct and honest are growing rich and happy, and it looks as though they could pass at Peter's Golden Gate when the trial balance is made with them.

Cheese made at home will have good, sweet whey, which, if properly cared for, makes excellent feed for calves and pigs. It is utterly ruined at cheese factories, however, and perfectly worthless, because it gets so sour and filthy before it can be hauled back home from the factory. It must be fed at the factory to hogs immediately in order to accomplish any good with it. The large dairy with silo and ensilage farming produces an immense amount of manure for the farm. From 40 head of cattle and three to five horses I have made fully 300 loads

annually of good manure for the last three years.—H. TALCOTT.

Some Champion Records.

The Jersey cows have always been noted as the cows for the dairy. They have kept up their reputation, and are improving it every year. In 1846 the Jersey cow was the first animal to give 14 pounds of butter per week. This record was considered phenomenal, and it was believed that this yield could not be surpassed.

The cow which made the record of 14 pounds of butter in 1846 would, in the same ratio, have given 728 pounds of butter per year. But it is not fair to presume that she would have given so much butter in a year. If this same cow had produced butter by the year in the same proportion which she did in one week the record would have been on file at the present time. It is, therefore, safe to presume that record made in one week did not extend over that period.

The Jersey cow, Mary Ann, of St. Lambert, made the record for one year by producing 867 pounds and three-quarters of an ounce of butter. This is on an average of nearly 17 pounds per week, or three pounds per week more than the one-week record of the Jersey in 1846.

Landseer's Fancy, another Jersey, beat this record by a good deal. This cow scored 936 pounds three and three-quarter ounces of butter for one year. At this rate the animal produced over 18 pounds of butter per week.

The next Jersey which beat the record was Appleton's Euratisima. Her record was, for one year, the production of 945 pounds and nine ounces of churned butter. This beats the previous record by a fraction of a pound per week.

The next record made was a surprise to everyone. Bisson's Belle reached the hitherto thought impossible 1,000-pound mark. Her record was greater than this, since she produced 1,028 pounds and 15 ounces in a single year. Her record, if averaged by the week, would nearly equal 20 pounds.

The last record breaker and the Jersey animal which now holds the prize for the yearly production of butter is Signal's Lilly Flagg. This animal has the record of making 1,047 pounds and three-quarter ounces of butter for one year, or a fraction over 20 pounds per week.

If the record made in 1846 was regarded as phenomenal, what can we regard the present standing record. This only shows the improvements which have been made in the dairy.

In butter making, practically all the fertilizing ingredients are represented in the skim milk. For this reason, in order to restore the fertility, it is best to retain the skim milk and feed it out on the farm. A cow giving 8,000 pounds of milk a year would send from the farm in sale milk 40.8 pounds of nitrogen, 13.6 pounds of phosphoric acid, and 12 pounds of potash. At the current rate of ingredients of commercial fertilizers this would have a value of \$9.55.

It is best to handle corn fodder in damp weather.

THE GARDEN.

Pluckings.

A curiosity at Gastonia, N. C., is a potato which weighs over 26 ounces.

The end of this month will not be too late to sow snap beans.

A farmer at Anniston, Ala., recently plucked a cantaloupe weighing 18 pounds.

When the fruit has been gathered from the raspberry patch the old canes should be cut out and burned.

It is not well to sow the turnip seed too early. If this is the case the turnips will get too large and pithy.

The best tomatoes are those which are firm, round, of good color, fine grain, few seeds, and rather a mild flavor.

From reports all over the country it would seem that the grape crop gives promise of giving an excellent yield this year.

Hoe down all unnecessary suckers in the blackberry patch. It is enough when there are four or five new canes to the hill.

If it is contemplated to force tomatoes under glass, the latter part of this month is the best time to sow the seeds for the first batch of plants.

The Cuthbert raspberry will not be so popular after this season. Although planted quite extensively in many localities, it is showing signs of weakness.

During the summer keep the blackberry patch in a good state of cultivation, and pinch back all young green canes after they have reached a foot or more in height.

The root of a wild potato vine sometimes reaches immense proportions. One was recently dug up in Tennessee which had the form of a boy's body and weighed 35 pounds.

Potatoes are more of a staple food than they are given credit for. Last year there were 245,000,000 bushels of tubers raised in this country, the value of which was over \$1,000,000.

An easy way for potting strawberry vines for transplanting is to fill a pot with rich soil and sinking it alongside the rows of old plants. Place a runner over the pot and secure it so that it will take root.

This is the month in which the late potatoes should be planted in the South, and incidentally it may be mentioned that the late potato crop is rapidly becoming one of the most important crops for the South.

The sowing of seed for the late cabbage in the South, if not already done, should be seen to immediately. Those who have already tended to this matter can set their plants out the latter part of this month or the 1st of September.

In most cases of scabby beets the cause can be traced to one thing, and that is the planting of beets on ground upon which was grown a crop of potatoes which were affected with the scab the year previous. Scabby potatoes transmits the disease to beets, and vice-versa.

There is a great likelihood of a good many rotten grapes being picked, which

are scattered on the bunches. If these are picked off and burned it will kill many disease spores. It is well to remember that every rotten grape left on the ground forms an admirable breeding place for spores, which will give the grape grower trouble next season.

The results of several experiments at different stations shows that the "scab" disease can be transmitted to healthy tubers by inoculation, and that when healthy tubers were planted on virgin soil the disease did not develop; but when such seed was planted on land where "scabby" potatoes had been grown the disease was sure to be transmitted.

The Blackcap raspberries are propagated by their tips. They do not sucker like the red varieties. When the end of the cane of the Blackcap begins to swell and enlarge, soon after the fruiting season, then is the time to propagate. Lay the tips of the young canes on the ground, cover them with one or two inches of soil and leave undisturbed until Spring, when, if the soil is rich, they will be found to be a mass of roots.

As a result of experiments conducted at the Iowa Agricultural College and in other sections of the State, Prof. J. L. Budd recommends the following varieties of small fruit for planting in northern Iowa: Grapes, Moore's Early, Cottage, Worden, and Concord; strawberries, Warfield, Haverland, Crescent, Beder Wood, Parker Earle, and Downer's Prolific; raspberries (black), Older and Tyler; red, Cuthbert and Shaffer's Colossal; blackberries, Snyder and Ancient Briton; currants, White Grape, Victoria, and Black Naples; gooseberries, Houghton; dwarf junberries, Osage.

Blight is one of the most destructive of all the diseases or insects which affect the potato. This disease almost ruined the potato crop in Ireland a few years ago, and the result was a famine in some districts. The blight, which causes the rot, is a fungus disease. There have been many so-called preventives, proposed and applied, but the best preventive is to plant only sound tubers. The Bordeaux mixture is recommended as a remedy, and wherever it has been applied early—before the tops had become spotted with the fungus and done thoroughly—the remedy has been found very effective. It must be understood that the vines are sprayed with the mixture.

A Vineless Potato.

The bush or bunch potato has received much praise. It is said to be one of the best sweet potatoes grown, and is becoming quite popular in the South. It has been raised in Fayette, Lamar, Pickens, Walker, and other Counties of Alabama, and also in Lowndes and Clay Counties, Mississippi. Capt. Sam Appling, a prominent farmer of Alabama, states that he has cultivated it for the fourth year, and finds it the equal, if not superior, to the yellow yam. It has a fine flavor, keeps well, and bunches something like the red peanut, with but little vine. It is said to be a splendid potato, and no trouble to dig or cultivate.

Planting Strawberries.

Strawberry planting can be done at any time during this month, but it is well to recollect that the earlier the plants are set out so much the better will be the chances of having a good yield next season.

Set the plants out on good land, which has been deeply worked and well manured. A good loam which is not level will make a good place for the bed. A place so selected is a natural drain, and the water will be thrown off. If, however, level land is selected, it is best to have plowed beds with furrows. It is well to see that the furrows are kept clear in the Winter so that the water will run off, otherwise the water will collect on the beds and kill the plants.

As to the manure, bone dust is excellent, but vegetable manures, such as muck, rotted turf, wood soil, ashes, etc., are the best. Give the land a liberal

application of fertilizing material before the plants are set out.

If the strawberries are to be field cultivated set in rows 15 inches apart and three feet distance between the rows. But if they are for the garden set them 15 inches each way. If there is any danger of the plants being killed by the sun after they are set out cover them with something. Old berry baskets will serve this purpose very well. Remove the covering as soon as the plant has had time enough to get well rooted.

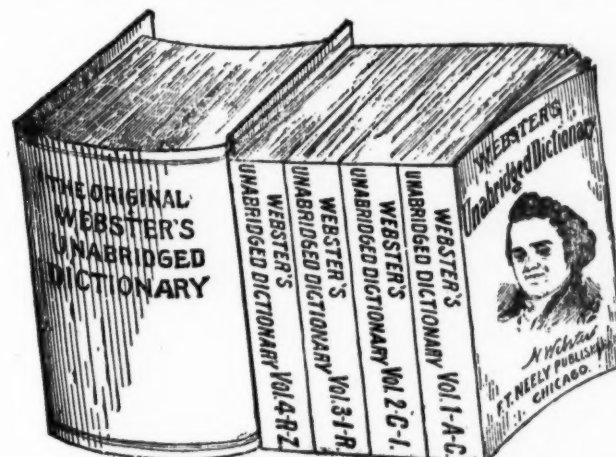
For garden culture keep in hills and cultivate clean. Mulch late in the fall and uncrown early in the Spring. Remove the mulchings after fruiting.

The careful, deep, and even preparation of the soil is an important item when sowing wheat.

Drainage, in addition to removing surplus water, deepens the soil.

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THE ORCHARD.

Cullings.

It is better to prune in the Fall than in the Spring.

Pears should never be allowed to become eatable on the trees.

There is no need of sending select fruit to market if it is not carefully packed.

It will never do any harm to cut off the dead wood or a crossing limb of a fruit tree.

After pear trees have arrived at the bearing age, there should be but very little trimming done.

Hay and fruit cannot be very well grown on the same land, and especially is this true in the case with apples.

It is better to prevent the growth that you do not want than it is to wait until the wood is made and then cut it out.

The birch trees in Russia serve a good purpose. Over 30,000 spoons are made annually from the wood of the birch in that country.

In assorting fruits for market it is very important that the barrels, or other packages, run even for both size and quality.

As a rule apple trees do not require very much pruning, but when it is necessary that they should be pruned do not hesitate to do it.

Some orchardists claim the proportion of nitrogen contained in barnyard manure is too large for fruitfulness, although exactly right for young growing trees.

If apples are to be marketed early, and the best quality is wanted, they may be allowed to remain on the trees until they obtain a high color and show maturity by dropping.

Surround each tree with tarred paper, tie it together to hold it in place, and mice will never touch the tree. By doing this it hardly costs a tenth of one cent to protect a tree against the ravages of mice or rabbits all Winter.

Barnyard manure, composed of the average grain and hay rations, contains about 10 pounds of potash, nine pounds of nitrogen, and four pounds of phosphoric acid to every ton. These parts make it quite valuable as a fertilizer for the orchard.

The most taking display of fruit, and the one which quickest attracts the buyer without his perhaps appreciating the reason, is the one in which the specimens, while not necessarily of usual size, are models one of another, no very large and no small ones, which equally destroy the beauty and attractiveness of the whole.

The World's Fair Commission of New South Wales has decided to send to Chicago for exhibition in the Horticultural Department of the Exposition the following typical representatives of Australian vegetation and flora: Tree ferns, staghorn ferns, birdsnest ferns, todea ferns, macrozamia of two distinct kinds, gigantic lilies, rock lilies and grass trees.

Fruit, when picking, should be handled precisely as an egg. Any rupture in the skin, however small, starts decay, which is worse in pears than apples. A

slight dent in the surface of an apple made by a fall of only a short distance will not cause it to rot; but the spot will dry the apple around it and spoil the appearance of the fruit.

If the orchardist will annually feed his trees properly and generously; will prevent other growth from undue interference; will make the best use of arsenical spraying; will thin his fruits faithfully at the right time and handle the product with care, he will be likely to be as well recompensed for his trouble as the business is susceptible of.

A prominent orchardist, whose orchard is in grass, keeps up the fertility in this manner: When the grass reaches a certain height it is cut and left to lie on the ground and decompose. The grass is cut as often as five times a year. After it is cut it serves as a mulch, and when it decomposes it gives back to the soil the valuable elements which entered into the composition of the grass. As a mulch it serves to bring the roots nearer the surface.

Let Some Fruit Remain.

EDITOR AMERICAN FARMER: It is a great mistake to strip the fruit trees with one picking. There must necessarily be a large amount of unripe fruit. If this unripe fruit be sent to market it will bring a low price; if it is allowed to remain on hand until it is ripened it will not be the best of fruit either in size or in flavor.

A plan which I follow I think will be found profitable to others besides myself. I am fully aware of the value of the importance of high culture. High culture does not signify the too liberal application of fertilizing material. Have the ground around the trees mellow and keep it mellow. Kill all weeds and grasses and allow nothing but the trees to grow. Keep the trees in proper condition. Keep an open eye, and if your trees are troubled with insects you will be able to take immediate steps toward exterminating them.

You have often noticed the large, juicy-looking fruit which is sold at a fancy price near the end of the fruit season. You wonder and marvel how such luscious fruits are grown. You would probably think that they belonged to some almost unknown variety, yet these are perhaps the product of the same varieties of trees which you have on your farm. I will tell you just how you can grow fruit equally as nice as this.

As I said at the beginning, I do not believe in cleaning a tree at one picking. I have three pickings for all my apples, peaches, and pears. In my first picking, which is quite early in the season, I select all the fruit which is fit to send to market. The fruit is ripe, or almost so, though not so large as the later fruit, and it brings a fair price, depending altogether at what time it reaches the market.

The first picking, of course, somewhat thins the fruit remaining on the trees. This is very good; the remaining fruit receives more nourishment, has more space in which to grow; consequently, it ripens quickly and reaches a better size than those first picked. Near the middle of the season I make my second

picking, which almost clears the tree of fruit.

Now, from my third crop is where the size, shape, and lusciousness of the fruit comes in. I let the fruit remain on the tree as long as possible, so that the fullest maturity can be reached. Everything is favorable for the proper maturing of this third crop, and the fruit has plenty of space in which to develop its fine quality. You will be surprised at the product of this crop. You can readily distinguish your varieties of fruit by their size, shape, and taste; but, aside from the similarity in shape, it would be difficult to tell if this third picking came from the same varieties. Its size is greatly increased, and its flavor is far superior to the ordinary fruit.

Be careful when sending this fruit to market. If there is any fruit inferior in size, color, or shape, send it in separate barrels, and mark them No. 2. The No. 1 fruit will sell at a fancy price on its own merits, while the No. 2 will bring more than the market price. On my trees the fruit from the third picking is about one-fourth of all the fruit which the tree bore, so you can see that it is profitable to follow this method.—JAMES REGAN, Prince George County, Md.

Black Knot on the Cherry.

Experience is a costly teacher, and nothing is so valuable than the advice of those who have had experience. The black knot in the cherry is a disease with which a good many farmers have had but a limited experience. They may be afraid to experiment for fear the result will be disastrous to them. But after they have the advice of an experienced man they willingly follow what he says.

The subject of What can be done to get rid of the black knot on cherry trees? was brought up before a recent meeting of the Allegheny Farmers' Club of Pennsylvania, and was the cause of a good deal of talk. The discussion was full of common sense, and as all were practical farmers they knew well of what they were speaking.

One member had 50 cherry trees which had never been afflicted with the black knot. If the cherry and plum trees are kept growing, and the ground around and kept fertile, and all black knot cut out and burned, he saw no reason why the ravages of the disease should not be checked.

There is no use cutting it out if you do not burn it, for it will spread just the same if left lying on the ground near the trees. A little negligence will give it such a start that you cannot stop it. You must not cut off close to the knot, but cut a good-sized limb, so there will be no chance for it to grow again.

Two farmers had tried several remedies without success, and their conclusion was that the best plan would be to cut all infected trees down and burn them.

Mr. E. C. Perkins, who has had considerable experience with black knot, gave his opinion. He said that if you will cut off the affected place the latter part of June or the first of July and burn it up, you will get rid of the trouble. If you examine one of those knots, you will find that inside is a little grub. His idea was that this grub turned into a fly during the Summer and deposited eggs

on the twig, and when they hatched they fed on the limb and destroyed its growth, and then finally turned into grubs again. If you will cut off the knots before this grub gets out you will get rid of it.

Another farmer, in agreeing with what Mr. Perkins said, stated that he cut off the black knot from his trees during the forepart of April, and they have never been troubled since. His trees are all right and healthy, and he thought that there is no use of cutting the trees down.

A Fertilizer for the Orchard.

Dr. Jabez Fisher, of Fitchburg, Mass., has a formula for preparing fertilizing material for the orchard which gives great satisfaction. He desired to have a fertilizer which would furnish each acre with about 75 pounds of potash, 30 pounds of nitrogen, and 25 pounds of phosphoric acid as the leading constituents. He deemed this a fair annual application to promote growth and productiveness, and holding the best proportions that experience indicates. His trees stand in sward, and as soon in the Spring as the frost is completely out of the ground, and is free from surplus water, he spreads this compound fertilizer. The formula is as follows:

Cottonseed meal.....	225 pounds.
Muriate of potash.....	140 "
South Carolina floats.....	75 "
Sulphate of ammonia.....	60 "
Nitrate of soda.....	30 "
Ground plaster.....	80 "
Total.....	600 "

He says that these ingredients cost him at the railroad station about \$10. Its merits are its ease in handling, the large proportion of soluble constituents immediately available, and the relative proportions of its components, which may be varied just as desired.

"Norfolk, Va."—Near-the-Sea.

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FOR SALE.—On four years' time, a highly improved, well-watered farm of 602 acres, at \$50 per acre, rich, deep soil, seven miles from Nashville, Tenn.; 450 acres in cultivation. Can rent for \$3,000. River and R. R. transportation. A big, no bargain. W. H. Timmons, Nashville, Tenn.

WANTED.—Situation as teacher in school or family; good references. Miss L. Garnett, Dunsmuir, Essex Co., Va.

25 acres fruit and poultry farm for \$500. J. Wanser, Vineland, N. J.

TO EXCHANGE.—For wax or cash, Standard L. or Heddon N. H. combs, at five cents each. Combs all worker, and in good order. H. D. BURELL, Bangor, Mich.

I pay highest prices for Confederate Money. Address Chas. D. Barker, Atlanta, Ga.

A fine lot of Jersey cattle to exchange for cheap Southern lands. Address Dunbar Farm Co., St. Bethlehem, Tenn.

\$100 clear; 10 acres good land for fruit, truck, poultry, near Atlantic City; no charge for deed; 21 acres, churches, school, railroads convenient. Payable \$1 weekly. Joseph C. Farr, 510 Walnut St., Philadelphia.

THE FARM.

Straws.

The corn crop this year as estimated at 1,700,000,000 bushels.

If wheat is put in immediately after corn the cost of the crop is considerably diminished.

The hay crop is reported as being large, but of doubtful quality owing to many weeds.

Excellent fodder can be had in November by sowing barley and rye at the present time.

It is estimated that the cereal crop of Canada has been damaged fully \$38,000,000 by insects.

The cocoon of a well-fed silk worm will often produce a continuous fiber of more than 1,000 yards long.

Remember that manure is valuable, and it is therefore best to save all of it. Put a floor in the stable and a roof over the barnyard.

Large clods will not grow wheat. The small kernels have a slender chance for germination when sown in such ill-prepared soil.

A feature in raising an ideal wheat crop is to get enough available plant food to grow just as large a crop as the straw can stand up under. No farmer would work his horses without food, but there are many men who put in crops without giving plant nourishment in the soil.

It is well to make a note of what parts of the farm need repairing. If there are any fences to be repaired make a note of it. If the barn needs to be attended to, make a note of it. When your time is not occupied by anything else it can be used to repair those things which need it.

After a thorough experiment Prof. Henry, of the Wisconsin Experiment Station, has found that in every \$100 worth of corn the ears represented \$63, while the value of the stalks was \$37. This will probably be an incentive to some farmers to make proper use of the corn as fodder.

The conditions of growing wheat are different from what it was years ago, and the cost has increased. In the farming of days gone by 13 or 14 bushels' yield per acre of wheat was a good enough yield to leave a profit, but at the present time it does not give any profit above the cost of production.

Mr. T. B. Terry in a recent lecture said that "from the best data it is shown that the average cost of production of wheat is about the equivalent of 18 bushels per acre, counting everything, and allowing good pay for men, teams, and machinery, as well as interest on the money value of the land."

Let us see what the cost is per acre to gather corn for fodder. An acre of land will contain 18 shocks of good size. The cost of cutting, husking, binding fodder into bundles and putting corn into the crib will be 20 cents per shock. Three cents more will be allowed for the hauling and stacking of each shock, which will make a total of \$4.14 per acre. This figure is rather high, for it not only includes the corn for fodder, but it also includes the cost of husking the corn on

the stalks, which would have to be done whether the cornstalks were gathered for fodder or not.

It is well to kill all weeds. Do not let them mature and go to seed, or you will have a larger number of weeds to fight against in the next season. The New Orleans *Picayune* digs out some important figures on the weed question in a statement of the amount of seeds many varieties of noxious weeds will produce. A number of the varieties named are not known in the North, at least under the name given. Wild carrot will produce 1,200 seeds; dandelion, 1,500; chickweed, 2,000; cockle, 3,200; campion, 3,425; chess, 3,500; dock, 3,700; ragweed, 4,372; groundsel, 6,500; ox-eyed daisy, 9,600; mallow, 16,500; motherwort, 18,000; foxtail, 19,500; sow thistle, 19,000; mustard, 31,000; Canadian thistle, 42,000; red poppy, 50,000; burdock, 400,328; purslane, 500,000; lamb's quarters, 825,000.

Smuts.

EDITOR AMERICAN FARMER: The question of how to avoid corn smuts often arise to a high degree. In order to answer this we must consider, first, that corn smuts are plants that grow upon plants. In their parasitic nature they sprout from a very small black seed, so small that the naked eye cannot see it. Where many seeds are together they would be pronounced dust.

These seeds get upon the grains of corn, and when the corn sprouts the smut sprouts also. When the epidermis or covering of the corn becomes softened by its growth, the smut plant enters the interior of the corn and grows just as the corn grows, either fast or slow, all the time pushing its tiny plant through the heart of the corn plant. When the corn plant has reached its height, and pushes forth an ear, the smut likewise pushes forth a branch to reproduce its kind. The smut will come out the weakest place, which is almost always in the ear. Of course the smut branch goes into the ear as soon as the ear begins to form. It will be seen the smut plant feeds entirely upon the corn plant, and by the time the corn has reached its full size the smut has a vigorous growth and a strong root.

The branch of smut that goes forth to produce seed sends out rootlets here and there through the young ear, and thus producing a large ball of smut instead of a fine ear of corn. If you examine a matured ball of smut you will find it to be a mass of small black balls, which resembles dust. Each one of these fine particles is an individual seed. Thus one smut seed will produce an innumerable number of seed. Should each seed grow, the next year the entire corn crop would be destroyed; but a smut seed will not sprout unless it is attached to a grain of corn.

Now, as to how the smut seeds come in contact with the corn is another question of greater importance. It may be by meeting—when the corn is planted, and happens to meet a smut seed in the ground just where the grain of corn is dropped; but this is very seldom. The most common way is at the time of husking. The husker creates quite a dust of these small seeds by shaking the bunches of smut to pieces. Oftentimes

bunches of smut are accidentally thrown into the wagon, and thousands of smut seeds are mixed with the corn. It is a habit of most corn growers to select their seed from the wagon, or crib, thus obtaining much corn seed that has smut seed attached.

If a corn grower would go through the field early in the Fall and select the fine, large, ripe ears for seed before husking time, he would avoid smuts, and improve his strain of corn. Of course, the first year would not bring a crop clean of smuts, as there are several ways by which a smut seed could come in contact with the corn and thus occasionally produce a smut ball. But if the farmer would repeat this process of selecting his seed corn, he would be improving his corn to such an extent that the small amount of time and labor would be very insignificant, besides almost entirely freeing your corn from smuts. Select your seed as soon as any corn is ripe, so you will get the earliest and best.

Other smuts, as on oats, wheat, barley, etc., grow and produce in much the same way as the corn smuts, but cannot be fought so easily. Much good can be accomplished by fanning all the seed grain. This will separate all the poor, light grains from the large, healthy ones, and also blow out many smut seeds. But, of course, no particular amount of smut spores could be taken away from the grain in this way. Should the grain be in the least dampish, but a very trifling amount of good could be accomplished. In order to fully rid your grain of smut, the seed must be placed into boiling water previous to planting. This process is quite technical, as the seed grain is liable to be spoiled.

The United States Department of Agriculture issued a small bulletin upon "Smuts of wheat and oats." This gives full directions for performing this work, and tells just how hot to have the water and how long to keep the grain in so as not to spoil the grain and destroy all smut seeds. This is a very interesting experiment for farmers to try. But don't try it until you have the bulletin previously mentioned. Write to Hon. J. M. Rusk, Secretary of Agriculture, Washington, D. C., for a copy of the bulletin.—JAMES PEARSON, Saunders County, Neb.

Corn Fodder.

EDITOR AMERICAN FARMER: No economy is practiced on the farm where cornstalks are allowed to go to waste. According to the value of corn fodder, as determined by Prof. Henry, the amount of money thrown away on the farms in the United States aggregates several millions of dollars annually. All this can be saved with little or no trouble. The man who converts his cornstalks into ensilage does exactly what is right. The same is the case with the man who saves the dried cornstalks. Corn fodder is good to feed to the animals on the farm. It is relished by them, and the dairyman who feeds the fodder in the shape of ensilage notes the difference in milk.

In olden-time farming it was the custom to work off all the straw and corn as feed for the cattle for the manure only, and not for the good it done the animal. But in this they were ahead

of the farmer of to-day who allows his corn to remain in the field.

The value of corn as fodder depends altogether at what state it is cut. If cut too early it is not so useless as when cut too late. When cut too late a considerable part of the nutritive elements have been turned into woody fiber. When it is cut at the right stage all the nutritive value is arrested in the stalk, and the higher the amount of nutrition the greater the value for feed. Generally when the grain begins to harden well is the proper time to cut the corn.

The quantity and quality of the nutritive elements is often diminished, due to the manner in which the corn is cured and exposed to the weather after cutting. No matter if the corn is cut at the proper stage the careless way in which it is afterward handled is enough to make me doubt if it is worth the time occupied in cutting and gathering to use as food.

Cut the corn when the grain begins to harden and put up in small shocks. When the corn has been shucked place it under a shelter, so that it will not be exposed to the weather. When cutting the corn it is better to cut low, since this has an advantage, and that is that it leaves the land in better condition for the next crop.—JAMES JOHNSON, Montgomery County, Md.

Seeding Land to Grass.

August is the time to sow grass seed, since the grass has a chance to get a good growth before cold weather begins. As soon as the land has been cleared of the previous crop run the plow over it and give it a rolling. By plowing the weeds are killed and by rolling the land is pressed together and evaporation is checked. If this is done the soil is well prepared for the seed.

Before sowing it is worth while to consider for what purposes the seed is sown. If the plant is intended to be used as a meadow, then seed should be used which will ripen simultaneously. Clover and orchard grass make a good mixture for this purpose. If the land is to be used for pasturing this will admit of the sowing of a large variety of seed, in order to keep up the supply of grass as long as it is possible. For this purpose red and white clover, timothy, redbud, June grass, meadow fescue, and other varieties will suit.

The Virtues of Stones.

I have heard a farmer brag that he hardly had a stone on his place as large as his hand, and to most farmers the idea of a stony farm is abhorrent. This is a mistake, and stones, like almost everything else, are not without their virtues. They help to make the soil rich by constantly wearing away and giving to it new material. They make it mellow and porous, and when coolness is needed they keep it cool. In warm weather they cool very quickly at night and condense the dew, thus gathering moisture from the driest air, so the land does not bake in a dry season or run together in a wet. Then the stones gather the water around them, making the soil porous. In Winter they give warmth to the ground, for they absorb and retain the heat from the sun. As long as they do not interfere with the cultivation of the land let them remain.

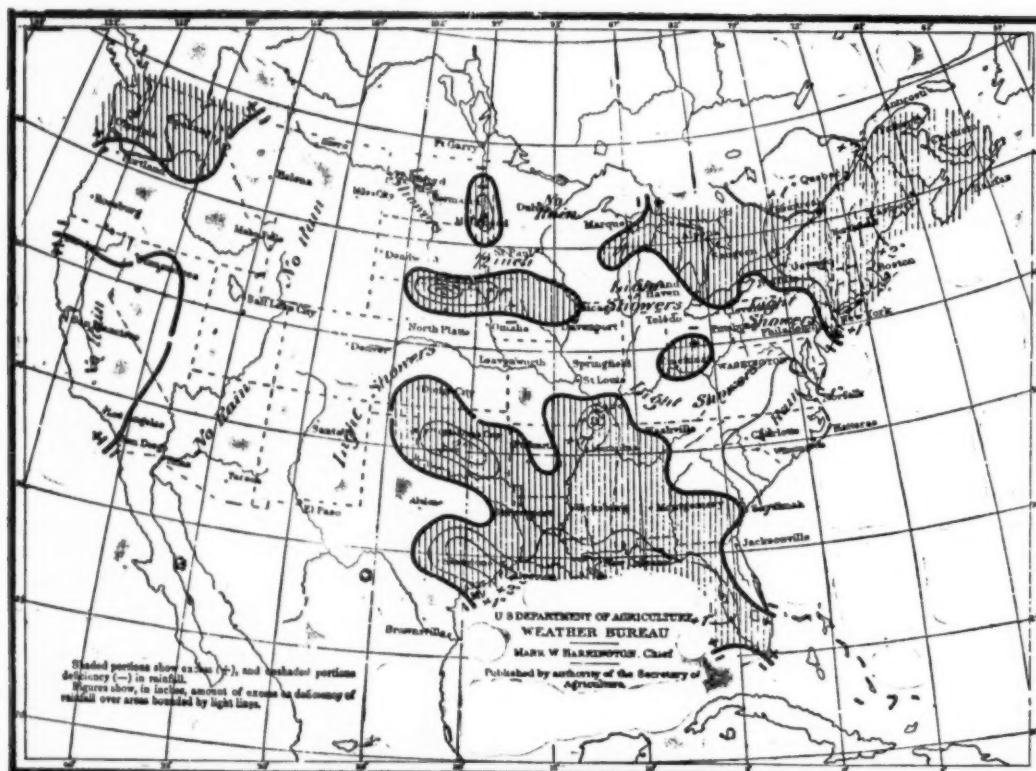
U. S. DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

Weather-Crop Bulletin for the Week Ending Aug. 15, 1892. :

Temperature Departures.



Rainfall Departures.



U. S. DEPARTMENT OF AGRICULTURE,
WEATHER BUREAU,
WASHINGTON, D. C., Aug. 16, 1892.

TEMPERATURE.

In the Southern States nearly normal temperatures have prevailed, there being a very slight excess near the Atlantic coast, while to the westward a slight deficiency existed over the Lower Mississippi, Arkansas, and Red River Valleys. Over the plateau districts and in California, except along the northern coast, it was much cooler than usual, especially in the Sacramento Valley and in southern California. The week was warmer than usual over all northern and central districts eastward of the Rocky Mountains, the excess in temperature being greatest in Nebraska and thence northward over the Dakotas and Minnesota, where the average daily temperature ranged from 3° to 8° above the normal.

Reports indicate that the week has been exceptionally favorable for the growth and development of corn in the principal corn-producing States. Moderate rains would, however, be beneficial in general, while in northern and central Illinois and in the Middle Atlantic States corn is suffering from the effects of dry weather.

The weather of the past week has decreased the seasonal deficiency in temperature in those districts where the departures have been greatest, viz., over the region from the Upper Mississippi to the Rocky Mountains, but the cool weather on the Pacific Coast has increased the seasonal deficiency in that region.

PRECIPITATION.

More than the usual amount of rain has fallen in the Gulf States, New England, the Lower Lake region, over limited areas in the upper Mississippi, Ohio, and Red River of the North Valleys, and Upper Lake region. There was also a slight excess of rainfall in the State of Washington. From the lower Missouri and central and Mississippi Valleys eastward to the middle Atlantic coast the rainfall has been very light, and over a considerable area of the Virginias and Carolinas no rain fell during the week. Drouth of more or less severity now prevails on the Atlantic coast from Maryland to South Carolina, and also over portions of Illinois, southern Michigan, Montana, and Kentucky.

Except along the south Atlantic and Gulf coasts the seasonal rainfall from March 1 is in excess of the average, the percentage of excess being greatest in the Lake region and Upper Mississippi Valley, where from 25 to 50 per cent. more than the usual amount of rain has fallen.

A Hymn to Nature.

How beautiful and perfect are the animals;
How perfect the earth and the minutest thing
upon it.
What is called good is perfect, and what is called
bad is just as perfect.
Vegetables and minerals are all perfect and the
imponderable fluids perfect.
Slowly and surely they have passed on to this,
and slowly and surely they yet pass on.

I swear I think now that everything without
exception has an immortal soul;
The trees have it rooted in the ground, the weeds
of the sea have it, the animals!

I swear I think there is nothing but immor-
tality;
That the exquisite scheme is for it, and the
nebulous float is for it, and the cohering is
for it:
And all preparation is for it, and identity is for
it, and life and materials are altogether
for it.

—Walt Whitman.

THE MARKETS.

WOOL.

BOSTON, Aug. 13.
The wool market is somewhat quieter and the demand for wool rather unevenly distributed, some houses reporting a very light trade. The general condition, however, is a very healthy one, and while there is no indication whatever of any advance in prices, values are held very firmly, and manufacturers, in order to buy, must pay ruling rates without expectation that any holding off for a time is going to unsettle matters. As a matter of fact, dealers are not looking very hopefully for any advance, because of the heavy stocks of wool here, but the excellent condition of the goods trade, the good condition of business in general, and the ease of the money market, lead them to expect manufacturers will continue to buy freely at current rates.

The feature of the market this week has been what many have predicted, the seeming recognition of the cheapness of fleece wools, particularly Michigan. The trials of new Territory wools show them to be of heavier shrinkage than usual, and turned attention slightly from them. With Michigan X low enough to cost but 50c secured and a fine medium Territory costing from 55c to 60c, it seems as though the Michigan wool should have plenty of takers. Such has been the case, and a number of buyers have switched off from the Territory wools to the fleeces. The week's business, then, is characterized by a lessened demand for Territory and increased demand for Michigan and Ohio X wools.

In Ohio and Pennsylvania fleeces there is a better trade to note, but values are unchanged. For XX 20s is the very top figure, the wool costing not more than 62c each. Considerable trade in No. 1 was noted, at 35c to 40c, the latter an exceptional figure.

Michigan wools are also in better demand and the wool is reported in good condition. Michigan X sells at about 51c, to cost each 50c to 55c, but it is noticeable that some holders are not offering the wool, preferring to wait, because of the low price. Very little wool is left in Michigan, and this is true of all interior points, the wool being cleaned up and more of it in Boston than usual.

A good trade in staple wools is noted, both washed and unwashed, but rather more inquiry for the latter, as the sales indicate. Ohio delaine has been sold at 32c, and Michigan at 29c to 30c. Quarter-blood unwashed combing sold in some volume at 25c, and three-eighths is quoted at 22c to 23c.

Texas wools continue rather quiet, and sales now will include wool that is on this market. Prices are very firm, but no better. The trade continues largely of six to eight months' wool, costing the buyer, clean, 55c up to 55c for a choice lot. Twelve months' wool is quoted at 55c, with 60c asked for a choice strong wool. We quote selling prices on the following basis: 49c for clean for fine and 45c to 48c for medium for fine growth, 57c to 60c; and for eight months' growth, 55c to 56c. Medium of year's growth is worth all the way from 50c to 45c, and 45c to 48c for six to eight months' growth.

Oregon wools have been more freely moved, but are unchanged in value. A good deal of the clip has arrived. Eastern No. 1 is quoted at 55c to 56c; No. 2, at 50c to 55c; Valley No. 1, 45c to 50c; and No. 2, 45c to 50c, scoured.

California wools are less active, and the trade is still behind the rest of the market. We quote in this market, clean, 50c to 55c for northern fine, twelve months; and 54c to 55c for eight months; 50c to 55c for southern twelve months; and 50c to 55c for six and eight months. Fall wools are quoted at 45c to 50c for fine, and 35c to 40c for defective.

Pulled wools have been more active on all grades, particularly B supers. Extras are quiet, but firm. We quote fine A on a scoured basis of 58c to 60c; A, 55c to 58c; C, 50c to 55c; combing, 40c to 45c; fine combing, 50c to 55c; extra, 55c to 60c.

Territory wools continue very active. Deliveries of Montana sales are reported that swell the total some, but the demand is still heavy. Prices are unchanged, buyers paying the prices current since the new wools arrived. A wool that will cost 60c clean, is an exceptional one, and there is not much of it around. Even for Montana, 50c represents the top of the market. We quote Montana fine, 55c to 60c; fine medium, 55c to 58c; medium, 52c; Wyoming and Utah fine, 55c to 58c; fine medium, 54c to 57c; medium, 50c to 53c.

Unwashed fleeces, and both medium and fine, are freely moved. Michigan fine is quoted at 30c to 32c, and Ohio is at 29c to 30c, with medium at 25c to 28c. Unmerchanted is in good demand at 20c to 22c.

Australian wools continue to move freely. A good healthy demand is reported, and prices are very firm. The bulk of the sales are to cost 60c to 70c clean. Sales of Port Phillip combing are noted at 75c to 78c, and occasionally a little higher.

Carpet wools are fairly active, and some users have been buying ahead a little so as not to be short if the cholera scare should make the wools scarce. Prices are reported as a little better.

Ohio and Pennsylvania Fleeces.—The sales include 60,000 pounds Ohio XX, 25c to 26c; 100,000 Ohio No. 1, 30c to 32c; 100,000 Ohio XX, 25c to 26c; 40,000 Ohio No. 1, 30c to 32c; 100,000 Ohio fleeces, p. t. Total, 200,000 pounds.

Michigan Wools.—The sales include 50,000 pounds Michigan X, 25c to 26c; 100,000 Michigan, 25c to 26c; 50,000 do, 25c to 26c; 10,000 Michigan No. 1, 30c to 32c; 40,000 Michigan X, 25c to 26c; 200,000 Michigan, p. t. Total, 435,000 pounds.

Combing and Delaine.—The sales include 40,000 pounds delaine, 35c to 36c; 12,000 unwashed combing, 25c to 26c; 55,000 do, p. t. 30,000 No. 1 combing, 35c to 36c; 60,000 delaine, p. t. 40,000 combing, p. t. Total, 242,000 pounds.

Scoured Wools.—The sales include 20,000 pounds scoured, p. t. 30,000 do, 30c to 32c; 15,000 do, 30c to 32c; 50,000 do, p. t. 60,000 do, 42c to 45c; 70,000 do, p. t. Total, 245,000 pounds.

Texas and Southern Wools.—The sales include

10,000 fine Texas, 27c to 28c; 100,000 Texas, p. t. 40,000 do, 18c to 20c. Total, 150,000 pounds.

Oregon Wool.—The sales include 40,000 pounds Oregon, 18c to 20c; 250,000 do, p. t. Total, 290,000 pounds.

California Wools.—The sales include 40,000 pounds Spring, p. t. 150,000 do, 18c to 20c; 75,000 do, p. t. Total, 265,000 pounds.

Pulled Wools.—The sales include 84,000 pounds pulled, 25c to 26c; 50,000 do, p. t. 30,000 do, 25c to 26c; 40,000 do, p. t. 22,000 do, 25c. Total, 230,000 pounds.

Territory Wools.—The sales include 50,000 pounds Territory, p. t. 100,000 do, 18c to 20c; 100,000 do, p. t. 15,000 black, 22c to 23c; 40,000 fine, 16c to 18c; 100,000 Territory, 19c to 20c; 150,000 Montana, p. t. 20,000 do, p. t. 100,000 Territory, p. t. Total, 835,000 pounds.

Unwashed and Unmerchanted Fleeces.—The sales include 50,000 pounds medium unwashed, p. t. 60,000 unwashed, 19c to 20c; 50,000 unwashed and unmerchanted, p. t. 35,000 do, p. t. 70,000 unwashed, p. t. Total, 205,000 pounds.

Foreign Wools.—The sales include 20,000 pounds carpet, p. t. 60,000 Australian, 18c to 20c; 45,000 do, 34c to 36c; 20,000 do, 32c to 35c; 35,000 do, 30c to 32c; 60,000 do, p. t. 75,000 do, p. t. Total, 495,000 pounds.

Ohio and Pennsylvania No. 1 fleeces.—32c to 34c
Ohio and Pennsylvania X..... 26c to 27c
Ohio and Pennsylvania XX..... 28c to 29c
Ohio and Pennsylvania XXX..... 29c to 30c
Michigan X..... 25c to 26c
Michigan No. 1..... 32c to 33c
Combing, No. 1..... 35c to 36c
Combing, No. 2..... 38c to 39c
Kentucky and Ind. 1-blood combing..... 26c to 27c
Kentucky and Ind. 2-blood combing..... 27c to 28c
Missouri 1-blood combing..... 25c to 26c
Missouri 2-blood combing..... 26c to 27c
Delaine, Ohio fine..... 32c to 33c
Delaine, Michigan fine..... 29c to 30c
Montana fine..... 14c to 15c
Montana medium..... 13c to 14c
Wyoming fine..... 14c to 15c
Wyoming medium..... 13c to 14c
Kansas and Nebraska fine..... 13c to 14c
Kansas and Nebraska medium..... 12c to 13c
Georgia..... 25c to 26c
Texas Spring medium, 12 months..... 20c to 21c
Texas Spring fine, 12 months..... 18c to 19c
Texas Spring fine, six to eight months..... 17c to 18c
Texas Spring medium, six to eight months..... 21c to 22c
Texas Fall..... 14c to 15c
Kentucky 1-blood clothing..... 24c to 25c
Kentucky 2-blood clothing..... 26c to 27c
Unwashed fine Ohio and Michigan..... 17c to 18c
Unmerchanted Ohio..... 20c to 21c
Unmerchanted Michigan..... 19c to 20c
Lambs super pulled..... 34c to 35c
Super pulled..... 30c to 31c
Extra pulled..... 26c to 27c
Canada pulled..... 28c to 29c
Western super..... 25c to 26c
California Spring..... 14c to 15c
California Fall..... 10c to 11c
Oregon east..... 20c to 21c
Oregon fancy..... 20c to 21c
Oregon fine valley..... 17c to 18c
Oregon medium valley..... 24c to 25c
Montevideo..... 27c to 28c
Australian and New Zealand..... 32c to 33c
Foreign carpet..... 12c to 13c

PRODUCE.

NEW YORK, Aug. 15.—It is a pretty good market for primesound apples, especially well-grained shipping stock; such is in relatively light supply, and the market is rather slow, plenty enough and slow. Pears in fair supply, prime well grown lots sell well. Most of the Bartlett, especially from Jersey and upriver points, are being picked too green; farmers would certainly do better to let the fruit stand at least until it is matured. Peaches do not seem to sell well as yet. Some of the Delaware and Maryland lots show good quality, and the Jersey fruit is improving, but buyers seem to have an idea that peaches are scarce and consequently high, and therefore do not give them much attention. Fine Delaware crates are selling at \$2.50 to \$3, and choice Jersey baskets at \$1.50. Grapes from points south of Virginia are about through. Virginia lots are improving in quality and sell better. A few lots of up-river Champion have arrived, but they come from girdled vines and are not very desirable; small sales reported at 80c. Plums are still scarce and wanted. Huckleberries in light supply and selling better. Blackberries nearly gone. Market liberally supplied with watermelons, a good many carloads arriving from Jersey; prices are lower and there is a slow trade. Muskmelons very plenty and decidedly lower.

Apples, Gravenstein, per barrel..... \$2 25 to 2 75
Apples, Nyack Pippin, per barrel..... 2 00 to 2 25
Apples, Oregon Pippin, per barrel..... 1 25 to 2 00
Apples, Astrakhan, per barrel..... 1 75 to 2 25
Apples, sweet varieties, per barrel..... 1 50 to 2 00
Apples, inferior, per barrel..... 50c to 1 25
Pears, Bartlett, up-river per barrel..... 4 00 to 4 50
Pears, Bartlett, Jersey, per barrel..... 3 50 to 4 50
Pears, Bartlett, Maryland and Delaware, per crate..... 1 00 to 1 50
Pears, Clapp's favorite, per barrel..... 3 50 to 4 00
Pears, Bloodgood, per barrel..... 2 50 to 3 00
Pears, Scooter and Bell, per barrel..... 1 75 to 2 25
Pears, common cooking, per barrel..... 1 50 to 2 00
Peaches, Jersey extra, per basket..... 1 25 to 1 50
Peaches, Jersey, poor to fair..... 50c to 1 00
Peaches, Maryland and Delaware, per crate..... 2 00 to 3 00
Peaches, Maryland and Delaware, per basket..... 1 00 to 2 25
Grapes, Virginia, Ives, per 10 pound basket..... 4 30
Grapes, Virginia, Ives, per 8 pound basket..... 4 40
Grapes, Virginia, Concord, per 8 pound basket..... 40c to 50c
Grapes, Virginia, Concord, per 5 pound basket..... 25c to 35c
Grapes, Virginia, Delaware, per 5 pound basket..... 50c to 60c
Grapes, Virginia, Niagara, per 5 pound basket..... 50c to 60c
Plums, Egg, up-river, per barrel..... 4 00 to 5 00

Plums, Egg, up-river, per keg..... \$1 50 to 2 00
Plums, Wild Goose, per quart..... 8c to 9c
Plums, Southern, Damson, per quart..... 8c to 9c
Huckleberries, per quart..... 7c to 11c
Blackberries, per quart..... 7c to 12c
Watermelons, per 100..... 8 00 to 30 00
Muskmelons, good to choice, per barrel..... 1 50 to 2 50
Muskmelons, poor to fair, per barrel..... 1 50 to 1 25

Long Island potatoes are selling well; exporters being steady buyers of good stock. The best of the Jersey lots work out fairly, but culls and poor seconds are not wanted. Sweet potatoes have declined sharply under increased supplies, but are now selling well and close steady. Green corn plenty and quiet. Cabbage scarce and higher, Lima beans steady. The market for tomatoes broke badly to-day under largely increased receipts; 75c has become an extreme rate for best Acme, and most of the Grant sold at 30c to 40c.

Potatoes, L. I., per barrel, in bulk..... \$1 50 to 1 60
Potatoes, Jersey, prime, per barrel..... 1 25 to 1 50
Potatoes, Jersey, inferior, per barrel..... 50c to 1 00
Sweet potatoes, Virginia, yellow, per barrel..... 1 50 to 3 00
Cucumbers, Long Island, per 100..... 1 25 to 2 00
Cucumber pickles, per 1,000..... 1 25 to 2 00
Cabbage, Long Island, per 100..... 4 50 to 6 00
Corn, Hackensack, per 100..... 50c to 1 25
Eggplants, Jersey, per barrel..... 1 00 to 1 25
Lima beans, fair to prime, per bag..... 1 00 to 1 50
Onions, State, per barrel..... 2 00 to 2 25
Onions, Jersey, yellow, per barrel..... 2 00 to 2 25
Onions, Orange County, red, per barrel..... 1 25 to 1 50
Squash, marrow, per barrel..... 75c to 1 00
Squash, Long Island, yellow, per barrel..... 75c to 1 00
Squash, Long Island, white, per barrel..... 75c to 1 00
Tomatoes, Acme, etc., per crate..... 50c to 75c
Tomatoes, Grant, etc., per crate..... 30c to 40c

POULTRY AND EGGS.

NEW YORK, Aug. 15.
Eggs.—Within the past few days choice new-laid eggs have advanced two cents, not because of an unusual demand, but because the arrivals have been so poor in quality that hardly enough good stock could be selected out to supply the wants of the trade.

State and Pennsylvania, new-laid, per dozen..... 20c to 21c
Northern Ohio, Indiana and Michigan, new-laid, fancy..... 20c to 21c
Other Western, new-laid, fancy to prime..... 19c to 20c
Western, inferior, per dozen..... \$2 00 to \$3 50

Poultry and Game.—Under quietness an increase in the receipts of live poultry prices have declined rapidly and the market is closing barely steady.

Grouse, woodcock, partridges, and venison are now legally salable; a few State woodcock have arrived and sold at \$1.12. Grouse quoted nominally at \$1, and partridges at \$1.25 per pair.

LIVE POULTRY.

Spring chickens, local, per pound..... 12c to 14c
Spring chickens, Western, per pound..... 11c to 12c
Spring chickens, Southern, per pound..... 11c to 12c
Fowls, Jersey, State, and Pennsylvania, per pound..... 12c to 13c
Fowls, Western, per pound..... 12c to 13c
Fowls, Southern and Southwestern, per pound..... 12c to 13c
Roosters, old, per pound..... 10c to 11c
Turkeys, per pound..... 10c to 11c
Ducks, New Jersey, New York, and Pennsylvania, per pair..... 60c to 85c
Ducks, Western, per pair..... 60c to 75c
Ducks, Southern, per pair..... 60c to 75c
Geese, Western, per pair..... \$1 25 to \$1 50
Geese, Southern and Southwestern, per pair..... 1 12 to 1 25
Pigeons, per pair..... 30c to 40c

DRESSED POULTRY—FRESH KILLED.

Turkeys, mixed weights..... 17c to 18c
Chickens, Philadelphia broilers, per pound..... 16c to 20c
Chickens, West broilers, dry picked, per pound..... 12c to 16c
Chickens, West broilers, scalded, per pound..... 13c to 15c
Fowls, State and Pennsylvania, per pound..... 13c to 14c
Fowls, Western, dry picked, per pound..... 13c to 14c
Spring ducks, L. I., per pound..... 17c to 18c
Spring ducks, Eastern, per pound..... 17c to 18c
Spring geese, Eastern, per pound..... 17c to 18c
Squabs, light, per dozen..... \$2 75 to 3 00
Squabs, dark, per dozen..... 1 75 to 2 00

GRAIN AND BREADSTUFFS.

NEW YORK, Aug. 15.
Flour was dull and unchanged. Wheat advanced 1c to 1c on a light speculation, but with a fair demand for export. Liverpool was a little stronger.

The range of prices is as follows:

	Open- ing.	Low- est.	High- est.	Clos- ing.
August.....	81	80	82	81
September.....	81	80	82	81
October.....	81	80	82	81
December.....	81	80	82	81
May, '93.....	81	80	82	81

Closing curb prices 8 1/2c for September and 8 1/4c for December.
Corn declined 1c, but recovered this later on.
Future sales 130,000 bushels, as follows:

	Open- ing.	Low- est.	High- est.	Clos- ing.
August.....	60	60	60	60
September.....	59	58	60	59
October.....	57	57	58	57
May.....	57	57	57	57

Closing curb prices 59 1/2c for September, and 58 1/2c for October. Oats were weak on the spot and slightly higher for September and October, with only a light business.

CHICAGO, Aug. 15.

September wheat sold from 74c to 77c, and closed at 77c.

Corn was a shade easier on more favorable news from the West. Messages from Kansas, Nebraska, and Iowa said that the fields were beginning to show the benefit of the recent showers. September sold between 53c and 52c, and closed at 52 1/2c to 52c.

Oats continue rather dull, with September and October keeping around 34 cents. To-day's range was within 1 cent. September sold between 34c and 33c and closed at 34 cents.

LIVE STOCK.

CHICAGO, Aug. 15.

There was a fair inquiry for cattle, and Friday's advance was freely paid, sales making on a basis of \$1.25 to 1.25 for poor to extra cows, heifers, and bulls; \$1.05 to 1.05 for stockers and feeders, \$1.15 to 1.15 for dressed beef and shipping steers, \$1.40 to 1.40 for Texas cattle, and \$1.00 to 1.00 for Westerns.

Sales of hogs could not be made to any better advantage than at the lowest time on Friday; in fact, many salesmen quoted the market lower for all goods. The highest figure reached was \$5.85, and that in one or two instances only. Most of the trading was done at prices below \$5.70 or at \$5.60 to \$5.50. Closing quotations were \$5.75 for poor to really choice grades. Receipts were: Cattle, 1,500 head; hogs, 8,000 head.

Cattle.—Market steady; choice to extra natives, \$4.00 to 4.15; others, \$3.80 to 4.05; Texas steers, \$2.50 to 3.00; range, \$3.00 to 3.50; prime, native cows, \$2.75 to 3.25.

Hogs.—Market irregular, 10c higher; rough packers, \$3.35 to 3.50; good mixed, \$5.65 to 5.75; prime heavy and butcher's weights, \$5.80 to 5.85; light, \$5.50 to 5.65.

Sheep.—Market steady; natives \$3.50 to 3.50; Westerns, \$4.75 to 4.90; lambs, \$3.50 to 3.50.

CATTLE.

NEW YORK, Aug. 15.

Choice..... \$5 30 to 5 40
Good to prime..... 4 85 to 5 25
Fair to good..... 4 70 to 4 85
Common to medium..... 3 65 to 4 05
Texas and half-breeds..... 2 90 to 4 05
Oxen and stags..... 2 70 to 4 00
Bulls and dry cows..... 1 60 to 3 00

BUFFALO, Aug. 15.

Market about steady for good grades; common a shade lower; closed strong; all sold; stockers steady at \$3.50; feeders, \$2.50 to \$3.50; extra steers, 1,500 to 1,000 pounds, \$5.25 to \$5.50; do, 1,000 to 1,500 pounds, \$4.75 to \$5.00; good, fairly fat shipping do, 1,300 to 1,400 pounds, \$4.50 to \$4.65; medium butchers' and shippers' do, 1,100 to 1,250 pounds, \$4.40 to \$4.50; light half-fat do, 900 to 1,000 pounds, \$3.50 to \$3.65; coarse, 1,000 to 1,400 pounds, do, \$2.75 to \$3.00; oxen, common to best, \$2.50 to \$3.50; cows and heifers, good to extra, \$3.25 to \$3.75; do, do, common, \$2.50 to \$3.00; poor to good mixed butchers' do, common, 800 to 1,000 pounds, \$2.40 to \$3.50; cows, common to fair, \$1.50 to \$2.40; do, good to extra, corn fed, \$2.75 to \$3.25; bulls, stock, \$2.25 to \$3.00; export, \$2.00 to \$3.00; bologna, \$2.25 to \$2.50; buttermilk calves, \$2.25 to \$2.50; veals, fair to best, \$5.50 to \$6.00; do, common lots, \$5.50 to \$6.00; milk cows, \$2.50 per head lower; common to best, \$3.50 to \$4.00; Hogs.—Market opened steady for good corn fed; grassers and common a shade lower; closed steady; heavy corn fed, \$6.00 to \$6.10; packers and medium, \$5.00 to \$5.10; Yorkers, good to best, corn fed, \$5.80 to \$6.00; do, light to fair, do, \$5.00 to \$5.75; grassers, common to good, \$5.20 to \$5.50; good heavy ends, \$5.25 to \$5.50; pigs, good to best, corn fed, \$5.50 to \$6.00; do, common slips to fair, \$4.40 to \$4.75; assorted roughs, \$4.70 to \$4.90; common roughs, \$4.40 to \$4.50; stags, \$3.50 to \$4.25.

Sheep and lambs.—Market opened lower; closed very dull; choice to fancy wethers, \$5.25 to \$5.50; fair to good sheep, \$4.00 to \$4.50; culls and common, do, \$2.40 to \$2.50; Ca. adas, \$4.75 to \$5.25; lambs, native, good to best, \$5.00 to \$5.50; culls to fair, \$3.50 to \$4.00; Canadas, \$5.50 to \$6.00.

ST. LOUIS, Aug. 15.
Cattle.—Market strong on Texans and Indians, slow on others; no good natives on sale; fair grades, \$3.40; Texan and Indian steers, \$2.40 to \$3.70; canners, \$1.15 to \$2.30.
Sheep.—Market strong; good natives, \$4.00.

BUTTER AND CHEESE.

CHICAGO, Aug. 15.

Creamery, extra, 24c to 25c; choice to fine, 24c to 25c; imitation creamery, fancy, 19c to 20c; fair to choice at 16c to 18c; dairies, selections, 20c to 21c; No. 1, 20c; No. 2, at 16c to 17c; ladies, No. 1, 14c to 15c; No. 2, 13c to 14c; packing stock, fresh, 13c to 14c; old, 6c to 7c; grease, 3c to 4c.
Cheese.—Full Creams—Twins, 8c to 9c; Young American, 8c to 9c; cheddar, 8c to 9c; skims, 6c to 7c for good to choice and 2c to 3c for common to fair; bricks, 5c to 6c; Swiss, 10c.

NEW YORK, Aug. 15.

Butter.—In light demand, but firm as a general rule; Creamery, State, and Pennsylvania, firsts, 19c to 20c; second, 18c to 19c; Western, separate, extra, 2c; firsts, 12c to 13c; seconds, 11c to 12c; thirds, 10c to 11c; State dairy, half tubs and pails, extra, 17c to 18c; do, firsts, 16c to 17c; seconds, 15c to 16c; State dairy, Welsh tub, extra, 12c to 13c; firsts, 11c to 12c; seconds, 10c to 11c; thirds, 9c to 10c; Western imitation creamery, firsts, 12c to 13c; seconds, 11c to 12c; thirds, 10c to 11c; Western dairy, firsts, 12c to 13c; seconds, 11c to 12c; thirds, 10c to 11c; Western factory, firsts, extra, 17c to 18c; seconds and firsts, 16c to 17c; factory, thirds, 14c to 15c.

Cheese.—Steady as a general rule, but trading slow; State factory, full cream, fancy, white, 19c to 20c; do, colored, 14c to 15c; cheddar, 8c to 9c; good to prime, 8c to 9c; common to fair, 7c to 8c; 50, part extra common to choice, 2c to 3c; State factory, full skims, 12c.

**Another Case.**

In a hammock in the orchard,
Swung I with my darling Grace;
There was danger of her falling,
So I held her 'round the waist.

Just above a rosy apple
Hung quite fast upon the tree.
"See that apple, dearest Charlie?
Get it, then," said Grace to me.

So I swung the hammock higher,
Reached—ah, it's another case!
For just then I lost my balance
And like Adam fell from Grace.

An Incentive to Stop.

"Johnny," said his mother, "if you don't quit smoking cigarets you won't grow a bit."

"Don't care if I don't," responded Johnny, sullenly.

"And, of course," continued the good woman, "if you don't get any bigger you will still have to wear clothes made from your father's old ones."

"I guess I'll quit, ma."

She—Who uses all the snuff that is manufactured?

He—No one nose.

Trouble at the Military School.

Instructor—What's wrong in the front rank?

Private Phipps—Please, sir, Private Simmons's went an' put a peanut in his breech-loader in place of a blank cartridge, an' he can't get it out.

Doubtful Ownership.

Passer—Hello, Uncle! Is that your mule?

Uncle—Jus' at de presen' time, yas-sir!

Passer—Then you really don't know whether you own him or not?

Uncle—I owns 'im sah, as fur as a pussen kin own a mule. I done pay fo' 'im sah, but dars suffin erbert dis sorter beans dat he allers resarbes ter 'imself an' dat's 'is innerpenunce. An' lemme tell yo' dis; ef a mule got whar he done wukkin de innerpenunce part of 'im, but don' mek no diffunce how sma'te man, he gotter wuk he min' a long spell fo' he fin' out ef he own de mule or de mule own 'im.

A Cautious Customer.

Customer—You are putting up prescriptions here the same as usual, aren't you?

Druggist—Oh, yes, sir!

Customer—Then I'll have to go elsewhere to have this one filled. The last one I got here was "put up" altogether too high to suit my notions of economy.

At the Races.

Bessie—O, Mamma! I'm so tired of the Grand Stand! Isn't there a Grand Sit Down?

Too Mean, Indeed.

"Well, if that ain't mean," exclaimed the prisoner; "every durned one o' the stories in this here paper they've gimme to read is continued. An' me to be hung next week."

It Took.

"Really, Miss Jones, you always laugh at me so, whatever I do or say. It is very unkind."

"Yes? But you are so amusing in whatever you do or say. You have no idea how funny you are."

"There you go again. Do you take me for a donkey?"

"Well, I suppose so, if I take you at all. But this is so sudden. However, ask papa."

The nail trade is said to be looking up. Certainly, think of the campaign lies that will have to be nailed between now and November.—*Detroit Free Press.*

The Thrifty Farmer.

He never had a lawsuit to take him to town, For the very simple reason there are no fences down: The barroom in the village for him has no charm; I can always find my neighbor on his forty-acre farm.

—*Atlanta Constitution.*

Too Strong Approval.

Patron—Have you any good butter to-day?

Grocer—We have, sir.

Patron—How will it compare with the brand you sold me a few days ago?

Grocer—Well, of course that was fine, but we think this last lot outranks it altogether.

Patron—That recommendation is too strong, my friend. I'll have to try elsewhere.

Why He Didn't Come.

Lady (wildly)—Why didn't you bring me milk for the baby yesterday?

Milkman—You said you wanted it from one cow, mum.

"Certainly."

"Well, you see, mum, that cow kicked over the bucket yesterday, mum."

High Praise.

Little Johnny—Please give me some more jam on my bread.

Aunt (proudly)—You like my jam, don't you?

Little Johnny—Yes'm. It's most as good as wot be buy in th' store.

He Was Out and In.

Peddler—Boy, is your father in?

Backwoods Boy—No, thir. He's out now.

"Where is he?"

"In th' house."

"You said he was out."

"Yeth, thir; that's why he's in th' house."

"I don't understand."

"Wall, y'r almighty dumb, seems ter me. He couldn't be in ther house ef he wasn't out, could he? He wouldn't be out yet, but he got 13 months off fer good behavior."

"Um—I see. What was he in fer?"

"Fer robbin' a peddler. Come in."

Insubordination.

Maj. Whortles—What's yo' gittin' so stompin' mad 'bout, Cap'n?

Capt. Emerson—I've gub d' command, "Eyes right," foh times, an' not a coon in d' comp'ny pays 'tention.

Wanted Long Dresses.

Little Girl—I'll be awful glad w'en I'm old 'nough to wear long dresses.

Mamma—What do you want long dresses for?

Little Girl—So I can climb trees wifout showin' zee holes in my stockin's.

Why is a lover like a map of the world? Because he embraces a great deal.

A Boy With a Heart.

First Little Chap—Sacksey Swipes, he's th' right sort of a boy. He's got a heart in 'im.

Second Little Chap—Wot did he do? "Ye know his brudder got killed by a explosion last Fourt'."

"Yep. Too much powder in der lead pipe."

"Well, that little brudder had four packs o' firecrackers wot he didn't have time to shoot off, an' Sacksey never touched 'em."

"Didn't?"

"Nary one. He saved 'em till this Fourt'. Sacksey wasn't around this Fourt'. D'ye know where he was?"

"Nope."

"He was off to der cemetery shootin' off dem firecrackers over his little brudder's grave."

None So Blind as They Who Won't See.

Smooth Top—Who is your barber, Baldwin?

Baldwin—Cooker; but I'm not going to him any more. He cuts so close he makes me look baldheaded.

The Fly in the Ointment.

"You ought to be very glad your corns are cured," said the pessimist's wife.

"I suppose so," replied the pessimist, "but now I can't tell when it's going to rain."

City and Country Prices.

Mr. Citimann—What in the world are you carrying?

Mr. Suburb—Milk and eggs and vegetables and things.

"Huh! Why don't you buy them in the country, where you live?"

"I'm too poor."

A Partition.

Seeker—Our estate matters are getting in such an unsatisfactory state that I have about made up my mind to take a friend's advice and begin a partition suit. Did you ever have anything to do with one?

Sage-man—No, but I have learned all about them.

Seeker—And such a suit virtually means a division of the estate, doesn't it?

Sage-man—Precisely; between the lawyers and the court.

A pair in a hammock
Attempted to kiss,
And in less than a jiffy
They landed like this.

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Report of the Chief of the Bureau of Animal Industry:

Diagram A. Average price of hogs and home consumption of hog products per capita.

B. Average price of hogs, compared with the total production of hog products per capita, and the price of corn.

C. Production of corn per capita, and the average price per bushel on farms, December 1.

Report of the Entomologist:

Plate I. New species of *icerya*.

II. The Lecfeld fumigator.

III. *Ceratitis capitata* and *Nephelodes violans*.

IV. Parasites of *Nephelodes* and *Hæmatobia*.

V. Rose chafer and green-striped maple worm.

VI. State Capitol at Lincoln, Neb., showing trees defoliated by the green-striped maple worm.

VII. Black scale and *Lucilia cesar*.

Report of the Chief of the Silk Section:

Plate I. Various races of cocoons.

II. Various races of cocoons.

III. Various races of cocoons.

IV. Pruning of mulberry trees, half-standard tree.

V. Half-standard mulberry tree.

VI. Pruning of mulberry trees, dwarf.

Report of the Statistician:

Map I. Corn (maize). Values and yields per acre.

II. Wheat. Values and yields per acre.

III. Cotton. Values and yields per acre.

Report of the Microscopist:

Plate I. Eight edible mushrooms common to the United States. Second series.

II. Twelve poisonous mushrooms.

III. Mushroom beds in cellar.

IV. Mushroom beds in market gardens.

V. Mushroom house.

VI. Microscopic researches in food fats.

VII. Nitrate of silver test of food and medicinal oils.

VIII. Nitrate of silver test of food and medicinal oils.

IX. Nitrate of silver test of food and medicinal oils.

X. Nitrate of silver test of food and medicinal oils.

XI. Species of mushrooms.

Report of the Botanist:

Plate I. *Ambrosia trifida*.

II. *Hieracium aurantiacum*.

III. *Elnaria vulgaris*.

IV. *Cuscuta trifolia*.

V. *Plantago lanceolata*.

VI. *Cenchrus tribuloides*.

VII. *Pennisetum typhoides*.

VIII. *Eragrostis alysioides*.

Report of the Chief of the Division of Vegetable Pathology:

Plate I. Hollyhock anthracnose.

II. Anthracnose of cotton.

III. Ripe rot of grapes and apples.

IV. Treatment of pear leaf blight (Bordeaux mixture).

V. Treatment of pear leaf blight (ammoniacal solution, copper carbonate).

Report of the Pomologist:

Plate I. Wild and cultivated peaches.

II. Peach tree, in orchard at Ocean Springs, Miss.

III. Switzer apple.

IV. Banquet Strawberry.

V. Brilliant grape.

VI. Pineapple field at Lake Worth, Fla.

VII. Zengi.

VIII. Tsuru.

IX. *Elaeagnus pungens*.

Report of Agent in Charge of Artesian Investigations:

Map I. Map showing results of artesian investigations.

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